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MECHANISM OF MONITORING AND ENFORCEMENT OF THE CONDITIONS OF THE LICENSED ACTIVITIES

Licensing/Competition Committee
Monitoring Working Group Paper

Dear Colleague:

As Chairman of the Licensing/Competition Committee for the fourth consecutive year, it is my pleasure to present to you a new series of issue papers and working group papers prepared during 2001, and finalized for the 5th Annual Energy Regulatory Conference for Central/Eastern Europe and Eurasia. The Licensing/Competition Committee was set up to discuss and analyze various regulatory issues with the aim of encouraging information sharing between newly established energy regulatory commissions in the region. As one can see from our past, the Committee members have been more and more active over the years, and as a result, the Committee has produced more extensive and far-reaching working group papers.

The Committee had two meetings in 2001 and analyzed three major issues: 1. *Electricity Market Development and Market Contractual Agreements in the USA, among EU Members and in the Member Countries of ERRA* 2. *Unbundling of Electric Sector Services to Structurally Separate Monopoly and Competitive Activities.* 3. *Measuring and Assuring the Competitiveness of Energy Markets*. The novelty of these papers is that we tried to reach out of the Region and incorporate experiences of fellow regulators from the European Union and the United States. Another uniqueness of the enclosed studies is that some of the discussed aspects do not cover the current activities or experiences of many of the ERRA member regulators, thus we had to rely very much on the Committee Advisor's examples being integrated into the papers.

In addition to the issues described above, the Licensing/Competition Committee has expanded into two other key areas of regulation: Monitoring and Regional Trade. These issues have been elaborated by two Working Groups of the Committee during the year and their major findings have been summarized in issue papers: 1. *Mechanism of Monitoring/Enforcing the Licensed Activities* 2. *Regional Markets.*

I strongly believe that the Licensing/Competition Committee has become a sound and productive working team over the past years, where opinions and views are freely expressed and shared. Most of the issue papers above are the results of the dedicated work of the Committee members.

These documents would have never become reality without the continuous support of USAID, the Committee Advisor, the Commissioners and Staff Person of the United States National Association of Regulatory Utility Commissioners and some of the Regulators of EU Member countries. I truly hope that we can continue our work with the same enthusiasm and dedication in the future.

Sincerely,

Dr. Gábor Szörényi
Deputy Director, Hungarian Energy Office
and Chair of the Licensing/Competition Committee

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Regional Energy Regulatory Program for Central/Eastern Europe and Eurasia, National Association of Regulatory Utility Commissioners (NARUC)

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Monitoring Working Group Members:
Mr. Endre Slenker, Leader of the Group, Hungary
Mr. Angjeli Pandeli, Albania
Mr. Toivo Otsmann, Estonia
Mr. Paata Tsintsadze, Georgia
Mr. Edilbek Bogombaev, Kyrgyz Republic
Mrs. Sarmite Paunina, Latvia
Mr. Algimantas Budas, Lithuania
Mr. Vasile Jitaru, Moldavia
Mrs. Michaela Popescu, Romania
Mrs. Lubov Goncharova, Ukraine

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I. Principles of Monitoring & Enforcement

1. Preface

One of the most important functions of Regulators around the world is to grant licenses allowing energy industry participants access to the market. After issuing the license, it is important that the Regulator ensure that licensees operate in accordance with the conditions of the license. The primary point is that the consumers should be protected; they should not be paying for unjustified costs and they should receive an adequate service.

Monitoring is a tool that makes it possible for the Regulator to follow up with the activities of the license holders through the timely collection and processing of necessary data and, if circumstances make it necessary, the Regulator can take measures against a license holder.

- **Definition of Monitoring**

The Regulator regularly reviews the activity of the license holders from the viewpoint of laws and regulations(license conditions as well) in effect. Methods: 1) requests information, data, statistics or analysis automatically regularly or ad hoc and 2) performs on-site inspections.

The Regulator shall observe, analyze, compare data received from the license holders and intervene if necessary.

- **Definition of Enforcement**

A formal or informal investigation and, if justified, the obtaining of some form of commitment from the licensee not to commit further violations or the assessment of a fine or other penalty.

Methods for monitoring:

1) Requests information, data, statistics or analysis automatically regularly or ad hoc and
2) Performs on-site inspections.
3) Investigate suspected non-compliance
4) Benchmarking

Some regulators from the ERRA member states gathered as a Working Group to compare their experience and practice in terms of monitoring, which you will find attached.

The Working Group started its activity by filling in a questionnaire (see chapter II).

During the work, Working Group Members gave special importance to the collection of data and data processing.

2. Regulators' Role in the Licensing Process

Regulators license different energy industry activities separately. In order to issue a license, they request specific information from the license holders in order to examine its professional and financial abilities. These data are available in the attached questionnaire. (Chapter II)

During the period of the license, the Regulators request data (annually, quarterly or monthly) from the license holders and perform on-site inspections. These data are processed by the Regulator and allow monitoring of the license holders' activity.

When the license expires, the role of the Regulator becomes of important again, since termination, closing down, and decommissioning (recultivation) are all subject to licensing requirements. While the Regulators have an essential responsibility when a license holder exits the system, another important role belongs to the environmental and other agencies. A key function in that regard is the qualification of a new licensee and issuance of corresponding license, as well as maintaining adequate service to ratepayers during the transition period from one licensee to another.

Enforcement options: enforcement actions permitted in statutes in the Region include the issuance of warnings, administrative penalties, monetary fines, tariff reductions and suspension or revocation of the license.

Summary of major forms of monitoring evident from the tables in Section II

3. Legal Background in the ERRA-member countries[1]

In **Hungary,** the statutory power has definitely enabled the Hungarian Energy Office's (HEO) monitoring activities. The Office has a structured monitoring system to evaluate compliance with license conditions and with different regulations, financial stability, efficiency and improvements.

The National Electricity and Heat Regulatory Authority of **Romania** (ANRE) is entitled to carry out monitoring of licensees. Each license contains a special provision that requires the license holder to report its technical and financial performance to ANRE annually. There is also a special unit responsible for the monitoring and audit of licensees. ANRE will establish a database for the electricity and heat sector that will make it possible to compare the cost, quality of service, and other data of similar businesses.

Ukraine: In accordance with the provisions of the Ukrainian Law "On Electric Energy" the right of monitoring is delegated to the National Electricity Regulatory Commission (NERC) of Ukraine. This activity is carried out both by the Department of License Control and regional offices of the Commission in the centers of districts, Republic of Crimea and city of Kiev. The representatives of NERC entitled to perform such monitoring have the right of access to the territory, equipment, and documentation of the licensees. Reaction to the facts of infringement of the license's provisions is carried out by the Commission in accordance with

[1] „What Have We Learned in Our Licensing/Competition Practices", December 2000, prepared by the Licensing/Competition Committee

the procedure provided for by the Provisions and Rules of performance of relevant types of licensed activities. Such measures against the licensee having violated the license's provisions, as the penalties for non-compliance with the energy legislation provisions, suspension or canceling of the license are very powerful means ensuring that the licensees would follow the provisions of license and existing legislation. Consideration of cases related to the infringements of the license's provisions is carried out at the open meetings of the Commission.

Statutory power has a positive influence on the **Georgian** National Energy Regulatory Commission's (GNERC) monitoring activities. A structured system of monitoring is being established now and should be implemented in the near future. The Commissioners of Georgia would support the Licensing/Competition Committee's development of recommendations for the system for monitoring licensed companies.

The National Energy Regulatory Agency (ANRE) of **Moldova** described their monitoring activities in detail. Monitoring activities are divided between three different departments. The Licensing and Regulation Department is responsible for monitoring production and the necessary technical/economic indices. The Rate and Economic Analysis Department is responsible for monitoring the financial and economic activities of the license holders. The Customers' Rights Protection Department checks on whether customers' complaints are answered and also monitors the quality of supply. There is no separate monitoring department within ANRE.

However, ANRE Moldova, stated that they are not performing monitoring to the full extent. This is partially due to the lack of a legislative base, necessary experts and expertise. At present the department is heavily occupied with the development and implementation of basic standard and regulatory documents. ANRE trusts that with the adoption of these basic normative acts, monitoring activities will be improved and strengthened since it is an important component of the regulation process.

ANRE performs other forms of monitoring using information from the Statistics Office and from other government agencies such as the Ministry of Justice, Ministry of Foreign Affairs, Customs Office, Privatization Agency, etc.

ANRE suggested the following proposal regarding monitoring: if it is to achieve high quality operational monitoring, a regulatory organization must have a clear understanding of the spectrum of monitoring indices, the list of necessary documents, what should be required of the personnel in charge of monitoring, and of the optimal conditions for on-site checks.

Pursuant to the **Armenian** "Law on Energy," monitoring of licensed activities is the responsibility of the Energy Commission. The revisions of this Law and the licensing conditions had a positive effect on monitoring performance. Realizing the importance of monitoring licensed operations, on September 1, 2000 the Commission created a Monitoring Department.

In **Latvia**, monitoring is performing by requiring companies to submit an annual report to the Public Utility Commission (formerly the Energy Regulation Council). In addition to ERC, the Competition Council, the Environmental Protection Inspection, and the State Income Board have monitoring functions.

In **Estonia**, the Energy Market Inspectorate (EMI) has a Market Supervision and Technical Department. A plan-based monitoring system is currently being developed.

In **Bulgaria**, the State Energy Regulatory Commission (SERC) is planning to establish a Monitoring Section that will monitor compliance with license conditions.

In **Lithuania** the National Control Commission for Prices and Energy (NCC) is authorized to monitor the license holders regarding compliance with the license conditions. The Commission has the right to demand all information necessary to perform its duties.

In the **Kyrgyz Republic**, the Gosenergo Inspection of Electricity and Gas operating under the State Energy Agency (SEA) is responsible for monitoring, but they lack a structured monitoring system. The Agency is planning to create the Monitoring Department.

In **Albania**, the Electricity Regulatory Authority (ERE) has statutory power to perform monitoring but as they state, "electricity is a natural monopoly and for this reason we have many economic problems."

In **Poland**, the Energy Regulatory Authority (ERA) has a Control and Analysis Department responsible for monitoring licensed activities. However, because of the high number of the license holders, it is very difficult to effectively monitor the power sector.

Unbundling has taken place in all countries examined (except for Albania) and operational licenses issued. In Poland there is a power exchange is operation. In Lithuania a new Electricity Act was approved which will come into force in 2002. Due to the intensive support of various international financial organization sand investment firms, the free access of electricity has become available in many countries of the region. A restricted range of consumers are free to select their suppliers – again in some countries. Partially or wholly state-owned system and market operators are quite wide-spread in the region. Those countries aiming at the EU accession have already started the gradual opening of the market.

4. International Experience Beyond the ERRA Member Countries

In countries with a large number of license holders (e.g. Norway), it is satisfactory if licensees publish the data characteristic for their activity on the Internet. The Regulator obtains all necessary information via the Internet, except for confidential data. This also provides an opportunity for license holders to monitor and check each other. In the case of any irregularities, other competitors would automatically notify the Regulator.

The definition of monitoring refers to "requests" for information and "on-site" inspections. Additional forms of monitoring which US Commissions engage in the evaluation of customer complaints to identify significant customer service or service quality problems of a licensee that violate legal requirements, the collection of publicly available data including investment firm financial and stock analysis reports on licensees, benchmarking of licensee performance both within and outside their jurisdiction, and continuous review of available trade press reports on industry developments to uncover matters requiring further inquiry.

How are Generators, Transmission Companies, Distribution Companies, Traders & System/Market Operators Monitored by Regulators in the United States?

The question applies to five separate forms of entities and both the "regulation" and "monitoring" by Regulators of their activities varies somewhat as between different Regulators in the United States. Transmission and distribution companies remain fully regulated monopolies, the first by the Federal Energy Regulatory Commission (FERC) and the second by State Regulators. They may or may not have formal licenses or Certificates of Public Convenience , as their entitlement to operate may extend back over 120 years and derive from their incorporation or a municipal franchise granted in the late 19th or early 20th century. Certificates of Public Convenience are similar in purpose and form to licenses granted in this Region, and may have enforceable conditions attached although this practice is less prevalent in the United States. In States which have deregulated their markets, transmission and distribution operations have or are increasingly being divided into separate companies, though often owned by the same holding company which used to provide integrated monopoly service. Increasingly, the ownership of plant providing these two functions is also being separated.

Transmission and distribution companies remain subject to the FERC prescribed Uniform System of Accounts for purposes of maintaining their books of account and reporting financial results in rate proceedings. Conformance with this accounting system, which is verified by Regulators through periodic audits, assures that reported financial results both to the investment community and in rate proceedings or periodic reports to the Regulator are consistent between companies and can be correctly understood. Annual and quarterly reports on financial results, sales, service quality matters, service interruptions and disconnections for nonpayment may be required. Most energy laws also subject affiliate transactions and security issuances to regulatory approval following the disclosure of relevant data respecting the transaction, and Regulator prescribed allocation procedures apply to the allocation of common costs (i.e. for example the costs of services provided by a service company to several, affiliated regulated and unregulated companies). "Affiliate transactions" can include the sale of land, plant, construction services, natural gas or professional services between a regulated and other affiliated, regulated or non-regulated company.

Many of the conditions imposed in Licenses issued by CEE/Eurasia Regulators are imposed in Regulations (i.e. applicable to all regulated companies or all of a specific type - i.e. Distributors) or in Company Tariffs in the United States rather than in a specific License or Certificate document. This would include open access transmission requirements, generator and customer interconnection standards, investment requirements in plant for adequate and safe service, specific plant investment standards designed to increase supply or transmission service reliability, limitations upon merger or major asset sales, meter testing and accuracy standards , service quality standards, registration of supply and service contracts audit of Company operations and finances and inspection of service plant and operations. United States Regulators may also establish periodic data reporting requirements to permit tracking of important programs which they have adopted such as funds collection and expenditure for environmental improvement purposes or the development of renewable energy, funds collection and expenditure to support universal service to or energy efficiency investments for the benefit of low-income customers and similar matters. Appendix _ provides a composite summary of the types of data collected by United States Regulators in their monitoring activities.

Generators and wholesale or retail suppliers are not subject to traditional utility regulation in deregulated markets in the United States. However, under FERC and State Regulator practices , they are required to file for and obtain a license prior to initiating operations. To

participate fully in FERC approved wholesale markets, they must also file an application to be permitted to charge their customers "market-based rates", i.e. rates determined on the basis of supply and demand and not on the basis of traditional cost of service. The purpose of this licensing requirement is not to regulate service quality or terms, or to serve as a basis for rate regulation. Rather, the licensing requirement assures that the generation or supply company has adequate financial strength, operations and other expertise to provide supply services and is registered in the State thereby facilitating customer law suits if disputes arise. The Commission may also establish regulations for or initiate special investigations into supplier advertising and customer contact practices, including particularly telephone solicitations, verifications of customer service orders and prohibitions of "slamming" and advertising fraud. The latter may arise in connection with promised price terms or "green" energy (i.e. environmentally non or limited damage from production) which is not delivered. FERC requires quarterly reports respecting the exercise and results of market-based rate authority, including total sales made (i.e. in kwh and revenue) and a description of major sales transactions.

System/Market operators are generally subject to FERC oversight and State Regulator oversight in States within which the entirety of a finite market is located (i.e. California, New York and Texas). These operators file periodic and annual reports with FERC and the State Regulator where applicable respecting their revenue requirement and associated rates for the services that they provide, their operations including matters of interest and within the jurisdiction of the Regulator such as market results, transmission congestion and related service interruptions and the results of market monitoring including indications of market power exercise. The relationship between the System/Market Operators and FERC respecting market monitoring and market power exercise is extensive and complex. It will be described in Licensing/Competition Committee Issue Paper # 3 (*Measuring and Assuring the Competitiveness of Energy Markets)*. System/ Market Operators report to State Commissions largely deal with matters of supply reliability and retail competition, which fall within State Commission jurisdiction.

Both FERC and a number of State Regulators permit and may require the filing of periodic data reports in electronic format as well as in hard paper copy. United States Commissions will typically initiate formal (i.e. on the record) or informal investigations where monitoring activities indicate the need to exercise jurisdiction, and will order the necessary adjustment in regulated matters where the facts indicate a need to do so (i.e. for example a rate reduction, service quality or practice improvement, etc.). In extreme cases of willful violation of clear legal requirements, a monetary fine or other penalty may be imposed under most regulatory statutes."

5. Current Practice of the Monitoring System

Considering the necessary differences between generators, transmission and transportation companies, it is necessary to determine the scope of date which should be included in the monitoring program as a minimum. These are:

- electricity balance (sales-purchase-sales, electricity trade turnover),
- basic economic indicators of licensees effectively providing safe energy supply (based on the effective Accounting Law, in accordance with the annual balance sheet and profit & loss statement):
    - liquidity data reflecting the current financial situation

- profit data
- data and projections reflecting the assets.

During the analysis, it is useful to examine how the received projected economic data meet the tendencies proven by the analysis.

Regulators should agree with the licensees to accept information via electronic mail in order to facilitate fast and reliable information collection.

The content of the data (technical, financial, accounting, commercial) is compared with relevant prices of fuels

6. Main trends of monitoring

There are three methods of monitoring: inspection legal acts, quality of service, financial. Regulators in different countries are free to select which method is to be used in various aspects.

One of the prime tasks for the future is to elaborate and operate a multi-level monitoring system allowing the continuous evaluation of the licensees' activity. The monitoring should cover various fields of the licensees' activity, such as economic-financial analysis, outages or supply quality and consumer satisfaction analysis in general.

In order to ensure reliable economic analysis, it is necessary to require data from the licensees which will allow the Regulator to monitor the safe and reliable electricity supply adjusted to present and future market conditions.

Regulated utilities are required to operate in a fiscally responsible manner (i.e. financially stable), and are permitted the opportunity to make a profit through rates and service terms established by the regulator. This is done in order that the utility be enabled to attract capital to improve and replace plant equipment and to meet legal obligations to investors who expect and are promised the opportunity for profit when making their investment under the applicable energy law.

Thus, business plans should be examined to ensure that they reflect the realization of safe, reliable energy supply meeting the required regulations and consumers' expectations.

A built-in control system (established jointly with the supply companies), which monitors the characteristics of supply quality, has to be established and introduced. Depending on available agreements, an outside audit is recommended as well. Furthermore, parameters for evaluating the operation of Call Centers – which play a crucial role in consumer supply – should be elaborated and introduced.

7. Changing monitoring practice after the restructuring and privatisation of the energy industry

The separation of vertically-integrated systems and privatization has taken place in the ERRA countries except for Albania. New types of licenses have been issued. Technical and production type of data supply has been initiated.

At the same time, the types of collected data may differ or increase; most probably data related to the financial performance will gain importance. It is imperative that the Regulator check and monitors technical as well as financial data. It is important to keep on drawing a distinction between monopolistic activities (transmission, ISO /TSO, distribution, and in case public service wholesaler, public supplier) and competitive activities (generation, supply / trade). The regulated monopolistic activities with official prices shall be further monitored with due stress as before. If competition is efficient enough, the rest of the activities could be monitored with less emphasis. New regulatory activities will appear regarding the competitive markets (day-ahead market, balancing market, market of ancillary services) where market abuse shall be monitored and the regulator, together with antimonopoly office, shall intervene if it is necessary. In respect of monopolistic activities, especially the provision for free and non-discriminatory access to networks shall be monitored along with a secure, but cost-effective operation of ISO / TSO.

The regulator needs to be proactive in its monitoring practice “in order to set initiatives.”

II. Data Collection of Regulators[2]

1. Licensing Procedure

1.a Data collected from Generators

	Data collected from Generators
Kyrgyz, Romania, Ukraine, Latvia, Hungary	Identification papers Registration paper
"	Technical specifications
"	Financial report (financial indicators for the last 3 years)
"+Georgia, Moldova, Not in Hungary	Payment of regulatory fees
Romania	Information regarding the metering
Romania	information regarding the ownership of the equipment and land (concession/ rental contract, inventory)
Romania, Moldova	Payment of the license fee
Georgia, Kyrgyz, Romania, Latvia, Hungary	Environmental report
"	Power sales agreement
Kyrgyz	Estimated cost/kWh
Romania	Management of the company (information regarding the existing technical and organizational framework that allows the fulfillment of the conditions provided in the licenses; curriculum vitae for the manager and the head of the regulated activity)
Romania, Ukraine, Kyrgyz	Feasibility study (Romania: only for new power plants and rehabilitation projects)
Hungary	Letter of Intent regarding Fuel supply
Hungary	Business plan
Hungary, Georgia, Moldova	Positive result of public hearing (minutes of meeting)
Moldova, Georgia	The Company's Charter, authorization for the company's incorporation
"	Certificate of registration in the State Hall of Records
" + Romania	Report on tax inspection (no debts to the state budget)
Moldova	Confirmation of the amount of the electric power that the licensee will generate
"	Documents confirming the possession of financial and technical resources and professionally trained personnel
"	Manager: permanent resident of Moldova, higher education in a field related to the activity, 5 years of experience, no criminal record
"	Technical specifications of certain facilities and installations
"	Last year financial report
"	Payment of regulatory fees, + payment of license fee
"	Appointment order of certificate
Georgia	List of capital assets

[2] Countries: Albania, Estonia, Georgia, Hungary, Kyrgyz Republic, Latvia, Lithuania, Moldova, Romania, Ukraine

+ Romania	Information on the qualifications and competence of personnel
	Technical specifications for connecting the power plant to the network
	Last fiscal year financial report
	Certification of the technical condition of the production assets
	Authorization for representative to act on behalf of the company

Special cases:

In accordance with the Energy Act, a market license is not required for generators in **Estonia**

In **Lithuania** the Law on Electricity will come into force from the middle of 2001.
The following factors will be collected: Data of economical and financial activities of the companies, energy and fuel balances. Reports on operations, reports of capacity and other. Electricity and gas companies provide economical data every month and financial reports every quarter of a year. Transmission and distribution expenses. Each generator also monthly reports about their expenses according to special forms and the set forms by Ministry of Finance as cash flows report, profit (loss) report.

In **Albania** data collection from generators is a new experience. The answers will refer to the fact that in Albania there is only one electricity (K E S H) company, vertically integrated and state owned, where all activities are together.
Documents requested during the licensing procedure are:

- The photocopied foundation act of the company.
- The photocopied registering certificate of company with the Trade Register Office.
- Information concerning the financial situation.
- Proof of payment of contribution to ERE for the current year.
- Technical characteristics of the capacity, installation.
- Data regarding the qualification of the staff of the company and data about the structure.

In **Romania**
1. Identification papers = a photocopy of the establishment act of the company and a photocopy registration certificate of the company);
2. Financial Report = the certificate of payment of taxes to the state budget and information concerning the financial situation for the last 3 years,
3. Payment = proof of payment the amount of fees to ANRE (based on the company expenses with the staff) and proof of payment the tariff for the license issue (based on the technical characteristics of the equipments)

1.b Data collected from Transmission companies

	Data collected from Transmission companies
Kyrgyz, Latvia, Hungary, Romania	Identification papers
"	Payment of regulatory fees
"	Technical specifications (Romania: information regarding the network/ Plan of the site/ Information regarding the ownership of the equipment and land (ownership/ concession/ rental contract)
"	Power sales agreement
"	Financial report (financial indicators for the last 3 years)
"+Georgia	Environmental report
Ukraine	registration documents
"	Technical documentation
"	Financial report
"+Georgia	Proof of payment for license issuance
Romania	Payment of the license fee
Ukraine	Amount and distribution of internal power loss by voltage level
"	Description of the power metering systems used by applicant
"	Methodology of standard power-loss coefficient calculations
"	Calculation of power transmission tariffs by voltage class
"+Georgia	Map of the proposed service area showing all power transmission lines
Latvia	Number of transformer sub-terminals
"	Power and length of power
"	Transmission lines as per voltage
Hungary	Grid code
"	Constraint Rules
"	Medium term energy demand and capacity plan
Moldova+Georgia	The Company's Charter, authorization for the company's incorporation
"	Certificate of registration in the State Hall of Records
Moldova	
"	Confirmation of the amount of the electric power that the licensee will generate
"	Documents confirming the possession of financial and technical resources and professionally trained personnel
"	Manager: permanent resident of Moldova, higher education in a field related to the activity, 5 years of experience, no criminal record
"	Technical specifications of certain facilities and installations
" + Romania	Report on tax inspection (no debts to the state budget)
Moldova+Georgia	Diagram of electric power grids
Georgia	List of capital assets
"	Last fiscal year financial report
" also for Romania	Information on personnel qualifications and competence
"	Certificate of the technical condition of the production assets
"	Authorization for representative to act on behalf of the company
"	Evidence of positive decision by open meeting of GNERC
Romania	Management of the company (information regarding the existing technical and organizational framework that allows the fulfillment of

	the conditions provided in the licenses; curriculum vitae for the manager and the head of the regulated activity)

Special cases:

In **Estonia** there is only one transmission company that is distribution company, electricity trader and system operator also.

1.c Data collected from Supplier companies

	Data collected from Supplier companies
Georgia, Kyrgyz, Ukraine, Estonia, Latvia, Romania*	Identification papers
"	
"	Technical specifications /Romania: lists containing the distribution installations (electrical lines, stations), pending on each secondary location/ information regarding the ownership of the equipment and land (ownership/ concession/ rental contract)
"	
"	Financial report (Romania: financial indicators for the last 3 years)
"+Georgia	Payment of regulatory fees
Romania*	Payment of the license fee
Romania*	Management of the company (information regarding the existing technical and organizational framework that allows the fulfillment of the conditions provided in the licenses; curriculum vitae for the manager and the head of the regulated activity)
Romania*	Information on the qualification and competence of personnel
Romania*	Supply zones
Georgia, Kyrgyz, Estonia, Latvia	Environmental report
"+Georgia	Power sales agreement
Ukraine	Amount and distribution of internal power loss by voltage level
"	Description of the power metering systems used by applicant
"+Estonia+ Romania*+ Georgia	Map of the proposed service area showing all power transmission lines
Estonia	List of goods and services applied for
"	List of consumers with addresses
"	Copies of contracts with transmission and distribution companies
Latvia	Number of transformer sub-terminals
"	Power and length of power
"	Transmission lines as per voltage
Hungary	Method of implementation of least cost
Moldova+Georgia	The Company's Charter, authorization for the company's incorporation
"	Certificate of registration in the State Hall of Records
" + Romania*	Report on tax inspection no debts to the state budget)
Moldova	Confirmation of the amount of the electric power that the licensee will generate
"	Documents confirming the possession of financial and technical resources and professionally trained personnel
"	Manager: permanent resident of Moldova, higher education in a field related to the activity, 5 years of experience, no criminal record
"	Technical specifications of certain facilities and installations
"	Diagram of electric power grids
Georgia	List of capital assets
"	Information on personnel qualifications and competence

"	Last fiscal year financial report
"	Authorization for representative to act on behalf of the company
"	Evidence of positive decision by open meeting of GNERC
Romania**	For suppliers*: 1. Identification papers (a photocopy of the establishment act of the company, a photocopy registration certificate of the company); 2. the certificate of payment of taxes to the state budget; 3. information concerning the financial situation, 4. curriculum vitae for the leaders of the company or the régie autonome (director/manager), certifying to their managerial capacity; 5. curriculum vitae for the head of the regulated activity; 6. Management of the company (information regarding the existing organizational framework that allows the fulfillment of the conditions provided in the licenses; Information regarding the responsibility for providing skilled and competent staff 7. proof of payment the amount of fees to ANRE. 8. proof of payment the tariff for the license issue. 9. Preliminary business plan 10. Documents (quality insurance manual, organization and operation regulation for the economic agent, etc.) testifying: - the existence of a collecting system for consumers' claims and their settlement; - the existence of a communication system with the customers, by which they would be informed about the regulation modification in the sector; 11. Information regarding the metering activity (agreement with a competent company)

***In Romania:** according to the Romanian Energy Law ANRE issues different licenses for the distribution activity and for the supply activity. This is the data for the distribution activity. At the end of this table ANRE include the information for the necessary data for the supply activity.

****In Romania:** according to the Romanian Energy Law, a supply license can be issued to a company that has **no** electric grid. This type of license is issued in order to permit the commercial activity - to sell energy to the eligible consumers. This kind of license is a 'retail' license, not a license for brokers.

Data collected from Distribution companies

	Data collected from Distribution companies
Georgia, Kyrgyz, Ukraine, Estonia, Latvia, Romania	Identification papers
"	
"	Technical specifications /Romania: lists containing the distribution installations (electrical lines, stations), pending on each secondary location/ information regarding the ownership of the equipment and land (ownership/ concession/ rental contract)
"	

"	Financial report (Romania: financial indicators for the last 3 years)
"+Georgia	Payment of regulatory fees
Romania	Payment of the license fee
Romania	Management of the company (information regarding the existing technical and organizational framework that allows the fulfillment of the conditions provided in the licenses; curriculum vitae for the manager and the head of the regulated activity)
Romania	Information on the qualification and competence of personnel
Romania	Supply zones
Georgia, Kyrgyz, Estonia, Latvia	Environmental report
"+Georgia	Power sales agreement
Ukraine	Amount and distribution of internal power loss by voltage level
"	Description of the power metering systems used by applicant
"+Estonia+Romania+ Georgia	Map of the proposed service area showing all power transmission lines
Estonia	List of goods and services applied for
"	List of consumers with addresses
"	Copies of contracts with transmission and distribution companies
Latvia	Number of transformer sub-terminals
"	Power and length of power
"	Transmission lines as per voltage
Hungary	Method of implementation of least cost
Moldova+Georgia	The Company's Charter, authorization for the company's incorporation
"	Certificate of registration in the State Hall of Records
" + Romania	Report on tax inspection no debts to the state budget)
Moldova	Confirmation of the amount of the electric power that the licensee will generate
"	Documents confirming the possession of financial and technical resources and professionally trained personnel
"	Manager: permanent resident of Moldova, higher education in a field related to the activity, 5 years of experience, no criminal record
"	Technical specifications of certain facilities and installations
"	Diagram of electric power grids
Georgia	List of capital assets
"	Information on personnel qualifications and competence
"	Last fiscal year financial report
"	Authorization for representative to act on behalf of the company
"	Evidence of positive decision by open meeting of GNERC

1.d
Data collected from Traders

A Trader is an entity that arranges energy transactions between buyers and sellers of electricity, but does not itself ever own the supply being sold.

	Data collected from Traders
Kyrgyz	Calculation of cost to sell 1 kWh
Ukraine	Description of the proposed activity
"	Registration documents
"	Statement affirming that no transmission lines are owned by the company
"	Compliance with standards regulating the sufficiency of assets held by a legal person engaged in business
Estonia	Character of foundation
"	Copy of the company's registration certificate
"	Approved statute of the company
"	Short description of the company
"	Previous year audited balance sheet
"	List of goods and services to be provided
"	List of consumers with addresses
"	Copies of contracts with transmission and distribution companies
"	Detailed description and plan of activity area, incl. Necessary objects for operation (network, transformers)
Moldova	The Company's Charter, authorization for the company's incorporation
	Certificate of registration in the State Hall of Records
	Report on tax inspection (nothing owed to the state budget)
	Confirmation of the amount of the electric power that the licensee will generate
	Documents confirming the possession of financial and technical resources and professionally trained personnel
	Manager: permanent resident of Moldova, higher education in a field related to the activity, 5 years of experience, no criminal record
	Technical specifications of certain facilities and installations
Romania*	For suppliers (traders)*: 1. Identification papers (a photocopy of the establishment act of the company, a photocopy registration certificate of the company); 2. the certificate of payment of taxes to the state budget; 3. information concerning the financial situation, 4. curriculum vitae for the leaders of the company or the régie autonome (director/manager), certifying to their managerial capacity; 5. curriculum vitae for the head of the regulated activity; 6. Management of the company (information regarding the existing organizational framework that allows the fulfillment of the conditions provided in the licenses; Information regarding the responsibility for providing skilled and competent staff 7. proof of payment the amount of fees to ANRE.

	8. proof of payment the tariff for the license issue. 9. Preliminary business plan 10. Documents (quality insurance manual, organization and operation regulation for the economic agent, etc.) testifying: 11. The existence of a collecting system for consumers' claims and their settlement; 12. The existence of a communication system with the customers, by which they would be informed about the regulation modification in the sector; 13. Information regarding the metering activity (agreement with a competent company)

Special cases:

There is no trader in **Georgia**.

The Act on Electricity does not include such a license in **Latvia and Hungary.**

1.f
Data collected from System Operators

	Data collected from System Operators
Georgia	Identification papers
"	Environmental report
"	Technical specifications
"	Power sales agreement
"	Financial report
"	Payment of regulatory fees
Estonia	Character of foundation
"	Copy of the company's registration certificate
"	Approved statute of the company
"	Short description of the company
"	Previous year audited balance sheet
"	List of goods and services applied for
"	List of consumers with addresses
"	Copies of contracts with transmission and distribution companies
"	Detailed description and plan of activity area, incl. Necessary objects for operation (network, transformers)
Ukraine	Description of the proposed activity
"	Registration documents
"	Compliance with standards regulating the sufficiency of assets held by a legal person engaged in business
Romania	Identification papers
"	Technical specifications
"	Payment of regulatory fees
"	Payment of license fee
"	Management of the company (information regarding the existing technical and organizational framework that allows the fulfillment of the conditions provided in the licenses; curriculum vitae for the

	manager and the head of the regulated activity)
"	Financial report (Romania: financial indicators for the last 3 years)
"	Information regarding the staff (detailed structure, number and qualification), testifying to the staff qualification; a) operation authorization for the operating dispatching systems; b) list containing the secondary locations;
Moldova	The Company's Charter, authorization for the company's incorporation
	Certificate of registration in the State Hall of Records
	Report on tax inspection (no debts to the state budget)
	Confirmation of the amount of the electric power that the licensee will generate
	Documents confirming the possession of financial and technical resources and professionally trained personnel
	Manager: permanent resident of Moldova, higher education in a field related to the activity, 5 years of experience, no criminal record
	Technical specifications of certain facilities and installations

Special cases:

The Act on Electricity currently does not include such a license in **Latvia and in Hungary.**

2. Monitoring and checking activities

Fields currently checked by the regulator

	Fields currently checked by the regulator
Georgia, Moldova	Monitoring of licensees based on license terms and conditions
Kyrgyz	Compliance with technical specifications and with generic electrical and thermal energy use guidelines
Romania	- Framework contracts
	- Monitoring of licensees based on license terms and conditions
"	- Primary and secondary legislation demands in energy field
"	- Unexpected check based on customers claims or other licensee are made by sounding in order to verify the deviations from primary and secondary legislation and ANRE regulations
"	- Performance standards/ parameters
"+ Georgia	Compliance with the license conditions
Ukraine	Amount of subsidized electrical power provided pursuant to NERC-issued subsidy certificates
"	Absence of cross subsidies between different businesses engaged in by licensees
"	Separation of accounting records for licensed activities from accounting records for other types of activities
"	Compliance with Ukrainian Wholesale Electricity Market settlement procedures
"	Licensee compliance with standards governing sufficiency of assets

"	Timely payment of license fees (as part of compliance with budget obligations
"	Licensee compliance with NERC-approved power tariffs
"	Compliance with Electrical Power Utilization Regulations
"	Timely notification by licensees of any change in business location or other change in founding documents
Estonia	Audited annual report (of traders dominating the market)

Special cases:

In **Latvia** the Energy Regulation Council shall within competence established by Energy law and the Energy Regulation Council statute, check compliance of any energy supply utility activity to laws and the cabinet of Ministers regulations.

In **Lithuania** monitoring of service quality and fulfillment of the requirements of legal acts. State Energy Inspectorate check Service quality in some extent. However Commission investigate consumer complaints and in the future will solve disputes, can adopt decision concerning price application.

In **Albania** the regulatory relationship between ERE and the company is new and ERE encounters lot of difficulties in applying monitoring procedures. In the License requests they set in a lot of data – theoretically , but in practice it is not possible to realize.

HEO (**Hungarian** Energy Office) requests the licensees to submit data on a regular basis. Currently HEO monitors the technical and economic activities of licensees. Generator

The licensee is obliged to compile a report for the Office once every year and to submit this report until 31 March.

(a) The Report shall contain all those followings in an analyzed and summarized form in respect of the previous year:
  (i) generation and sale of electricity;
  (ii) quality of generation and measures taken to improve quality;
  (iii) summary of outages; and
  (iv) change in status of means of production (including description of new and retired elements).

(b) The Report shall contain a short (3 year) and the current year's business plan, which includes besides economic data the followings:
  (i) planned Available Net Capacity;
  (ii) a planned outages, that last longer than the overall maintenance determined by the Grid Code; and
  (iii) planned developments of assets (exceeding a 100 million HUF)

Transmission company

The licensee is obliged to compile a report for the Office once every year and to submit this report until 31 March.

(a) The Report shall contain all those followings in an analyzed and summarized form in respect of the previous year:
  (i) electricity trade,
  (ii) quality of transportation, measures taken to improve quality,
  (iii) summary of system outages and outages of the Grid, and

(iv) change in status of Grid assets (including description of new and retired elements).

(b) The Report shall contain a short (3 year) and the current year's business plan, which includes besides economic data the followings:
   (i) current balance of electricity demand and capacity in the electricity system,
   (ii) load and retirements and planned current developments regarding capacity,
   (iii) planned measures for increasing capacity on the Grid (development) and reducing capacity (retirements); and,
   (iv) planned technical and financial development on the Grid.

Supplier

The licensee is obliged to compile a report for the Office once every year and to submit this report until 31 March.

(a) The Report shall contain all those followings in an analyzed and summarized form in respect of the previous year:
   (i) electricity trade;
   (ii) quality of supply, measures taken to improve quality and development of number of consumer complaints;
   (iii) summary of outages; and
   (iv) change in status of distribution assets (including description of new and retired elements).
   (v) description of activities taken to inform consumers

(b) The Report shall contain a short (3 year) and the current year's business plan, which includes besides economic data the followings:
   (i) expected development of consumers' electricity demand;
   (ii) planned measures for increasing capacity on the distribution network (development) and reducing capacity (retirements); and
   () measures to be taken to reduce consumption (demand side management)

Further all licensees shall submit the report on the balance sheet in respect of the previous year to the Office until June 30. / Hungary

In **Romania**

ANRE monitors the technical and economic activities of licensees. All licensees must submit to ANRE, every year, two reports**: Performance Report** (issued in accordance with ANRE procedure for annual activity reporting) and **Annual Financial Report** (issued in accordance with ANRE procedure for annual financial reporting). Detail are included in Appendix E.

3. Currently data collected from the licensees

	Currently data collected from the licensees
Georgia+Kyrgyz	Financial report of the past year
"	Plans for the upcoming year
"	Relevant information to operation
Romania	Forecast of consumption for current year and 3 years ahead
Romania*	All licensee must transmit to ANRE: 1: The **Performance Report** – shall contain data for the previous year and 3 year ahead 2: The **Annual Financial Report** – shall contain data for the previous year and 3 year ahead
Latvia	Annual report; environmental regulations, surveillance polluting the environment- May 31st deadline
"	Preliminary declaration stating the amount of power produced, stored, transmitted, distributed during one previous year, and the amount planned for the current year – January 31st deadline
"	Preliminary declaration about stock of fuel, consumption of fuel, consumption of fuel as per kWh, Gcal, kind of storage (tanks, reservoirs, warehouses, capacity in tons, cubic meters) – January 31st deadline
"	Annual business plan Auditors conclusion about financial position – January 31st deadline
Ukraine	Amount of subsidized electrical power provided pursuant to NERC-issued subsidy certificates
"	Absence of cross subsidies between different businesses engaged in by licensees
"	Separation of accounting records for licensed activities from accounting records for other types of activities
"	Compliance with Ukrainian Wholesale Electricity Market settlement procedures
"	Licensee compliance with standards governing sufficiency of assets
"	Timely payment of license fees (as part of compliance with budget obligations
"	Licensee compliance with NERC-approved power tariffs
"	Compliance with Electrical Power Utilization Regulations
"	Timely notification by licensees of any change in business location or other change in founding documents
Hungary	Further to data supply described under 2. HEO may request additional, individual data supply related to individual cases.
Moldova	Quarterly financial report
	Checking if current licenses fees paid on time
	Information that the Commission considers necessary for its operation

Ukraine: *From Generators:*
Decree on Implementation of Industry-Wide Reporting Forms,

Actual and Estimated Fuel Use Data for Legal Persons Engaged in Licensed Activities Related to Electric Power Generation and in the Electric Power Auctions, Actual and Estimated Data Concerning Licensed Activities Performed by Legal Persons Engaged in Business, in which licensees report various economic indicators for business they are licensed in (cost of production and various components thereof, amortization, capital investment, profit, return on capital, etc.).

From Transmission Companies:

Actual and Estimated Data on Volume of Electrical Power Transmission Over Voltage Class-I and–II Electricity Grids,

Payment Report for Usage of Local Electrical Grids by Electric Power Suppliers, Actual and Estimated Information Concerning Licensed Activities Performed by Legal Persons Engaged in Entrepreneurial Activity.

Distribution Companies:

Actual and Estimated Data for Electrical Power Deliveries to Users by Voltage Group and Class,

Report on Electricity Provided to Users with Monthly Usages Greater Than 150,000 kWh, Actual and Estimated Data Concerning Licensed Activities Performed by Legal Persons Engaged in Business Activity,

Report on Invoices for Electrical Power Purchased by Suppliers on the Wholesale Electric Power Market,

Report on Payment of Indebtedness for Electrical Power Purchased on the Wholesale Electrical Power Market.

From Trading Companies:

similar to Distribution Companies

From System operators:

The Energorynok State Enterprise licensee is required to transmit the following Microsoft Excel worksheets to NERC by e-mail on a daily basis: Analysis of Ukrainian Unified Energy System daily operations, data on bids submitted by generation companies; estimated and actual electric power consumption; estimated and actual external power flows; cost of losses in the primary and international grids; amount of electric power generated and delivered by nuclear power plants, hydroelectric power plants, and cogeneration power plants to the Wholesale Electric Power Market; the wholesale market price for electric power; power consumption by suppliers (Oblenergo and independent suppliers); payments to individual suppliers (Oblenergo and independent suppliers); / Ukraine

***Romania**

The **Performance Report** – shall contain the following data for the previous year and 3 year ahead:

A. From all licensees:
   - Electricity/ Heat traded
   - Number of customers
   - Number of personnel
   - Number of customer complaints/ claims (statistic situation)

B. From generators:
   - Units availability (compared with planned availability)
   - Units shutdowns/ loses
   - Fuel reserves
   - Environmental protection

C. From transporters:
   - Transmitted and Delivered Electricity/ Heat
   - Connection/ Disconnection to/ from the system
   - Network characteristics
   - Transmission System Unavailability
   - Incidents
   - Performance Standard observation

D. From distributors:
   - Distributed Electricity/ Heat
   - Connection to/ Disconnection from/ the system
   - Network characteristics
   - Distribution System Unavailability
   - Incidents
   - Performance Standard observation

E. From suppliers:
   - Connection/ Disconnection
   - Range of payment arrangements offered to non eligible consumers
   - Percentage of billing based on estimated readings
   - Frequency of billing non eligible consumers
   - Meters
   - Performance Standard observation see Appendix E, par.1.

F. From dispatch licensee:
   - National Power Balance (annually and monthly)
   - System quality and safety
   - System Unavailability
   - Number of incidents
   - Sub-Station Availability

G. From ancillary services licensees:
   - ancillary services offered by generating unit
   - ancillary services made available upon contract or demand

The **Annual Financial Report** – shall contain the following data for the previous year and 3 year ahead:

All licensees:

a. Director's Responsibility Statement
b. Audit Report on the Regulatory Accounting Statements
c. Financial Statements
   - Balance sheet (group balance sheet and details for each licensed activity)
   - Profit and loses account (for group and for each licensed activity) see Appendix E, par.2.
   - Cash flow
   - Supporting documentation regarding cost allocation

4. On site supervise

4.a On site supervise include

	On site supervise include
Kyrgyz +Moldova	Compliance with law
"	Conflict resolution
Romania	ANRE has done a limited number of on-site inspections. These inspections focused on: - Evolution of the rehabilitation activities of an electric power plants equipment
"	- The issue of all legal authorizations for the rehabilitated equipment commissioning and operating
Ukraine	Complaints from licensees, enterprises or individual customers
"	The licensee has failed to comply with NERC decisions
"	Requests from various governmental authorities
Ukraine +Moldova	Violated licensing conditions
Hungary	For power plants: Inspection of the outages registration of the given year (keeping a record, achievement of the announcement obligation, reasons, consequences, prevention, duration, outage of production) Maintenance activity (own staff, external consultants, expended time, costs) Consultation about the recultivation of the site in case of decommissioning, dismantling of plant and preparation of land for reuse (where it is exists or planned) Checking of the quality assurance system's operation Environmental regulation and observance of it, checking of the environmental permission's existence On-site visit (viewing of the power plant)
"	For power plants under construction: On-site visit of the construction. Inspection of the finished equipments, checking of its data. Viewing of the main devices' vouchers. Viewing of the entered contracts. Comply with the ministerial degree about stocking of fuel of power plants concerning how they keep with it. Consultation of the start of commissioning Roles introducing after commissioning, concerning of the quality assurance system according to the Grid Code
"	For distribution companies: Inspector checks on the spot if the data fit, planned notices and it's expected affects. Examines basic certificates and processes on site, as a result there will be a examined data produced. Results are discussed on the site with the management of the company and they will be taken into minutes. If the problem makes it necessary, the regulator calls the attention of the licensee or if the problem is that serious, the regulator may impose a fine.

Special cases:

In **Estonia** the regulator does not perform on-site supervise regularly, only in the case of concrete problems or consumer complaints.

Pursuant to a **GNERC** resolution, starting in 2001 commission audits are performed on compliance with license conditions by the hydroelectric and cogeneration plants in the country. The technical condition of the equipment and the progress in preparations of the plant for the fall/winter period are also assessed. The working groups (performing the assessments) consist of leading GNERC and Gruzenergogeneratsiya experts. Each working group consists of 6-7 individuals, there are a total of 3 working groups.

See attached Questionnaire on Verifying Compliance with License Conditions by TbilGNERC and Tbilelektrocentral Cogeneration Plants. (prepared by GNERC) Appendix B.

See attached Program for Verifying Compliance of Georgian Hydroelectric Plants with License Conditions (prepared by GNERC) Appendix C.

4.b Field supervised

	Field supervised	**Number of staff employed in inspect**
Georgia	Safety and environmental requirements	
Kyrgyz	Effective and efficient use of electric power	With the assistance of the State Inspectorate on Power and Gas, which has its own agents in each oblast – 150 people
"	Compliance with laws and regulation	
"	Reliability and Security	
"	High quality and uninterrupted power supply	
"	Technical condition of the equipment and equipment use	
"	Compliance of newly built, manufactured, reconstructed, installed or repaired equipment to latest regulations and standards	
"	Maintenance of records on production and use of power	
"	Correct use of established rates	
"+Moldova	Compliance with general guidelines for use of electric power	
Moldova	Licensee's compliance with license conditions	
Romania	By now, ANRE has done a limited number of on-site inspections. The Inspection Department has investigate on-site: - the claims of various companies (e.g. energy consumers) in order to solve, according to the ANRE regulations, the divergences between the parts - The manner in which the licensee follows the license conditions	3 or 4 people in teams
Latvia	The manner in which the licensee follows the	

	license conditions	
Hungary	Generators: Actuality of the technical-economical reports, the specification of its numbers, submission of plans and forecasts.	3-4 people teams
"	Distribution companies: Outages data supply prescribed in the license on the technical area. Measures taken in order to improve supply quality, the relation between planned programs, failure statistics and development plans	3-4 people teams

Special cases:

In Romania
ANRE monitors the manner in which the License Holder follows the license conditions and inspects in accordance with the "Regulation for the Ascertaining, Notification and Sanctions of the Breach of Regulations Issued in the Electricity and Heat Sector" and "Procedural Standards for Inspecting the Observance of the Regulations Issued in the Electricity and Heat Sector".

The supervisory team include the author of the concerned regulation and some members from the Inspection Department (ID). ID members who are part of the inspection team, ensure the consisting of all inspection and/ or perform inspections in theirs discipline/ field of activity. The inspection is performed during 3 or 4 weeks, with leaving the enough time in order to let the License Holder prepare the answers to the specific ANRE questions. The inspection team has 3 or 4 members of different discipline (engineers, economists, layers).

5. Future development plans

Extension of supervisory activities

	Extension of supervisory activities
Romania	The inspection activity shall extend after the process of issuing licenses will be complete. ANRE will establish new subjects for its inspection activity based on the data and information collected from the Licensees. The extension of the inspection scope shall be done also in accordance with the experience acquired from the previous inspections.
Hungary	For power plants: They want to examine the secure operation and the trade in the future. The development and planning of this new venture is in process. They plan to access to databases of the system operators, the dispatch centers of the distributors. They plan that the information required for the operation of the Power Exchange PX would accessible to the HEO.
"	For suppliers They would like to implement controlling built-in processes, this means the introduction of the quality assurance system by the companies. This could stabilize the operation processes

	(complemented with audits), the reliability of results and data can improve. They would like to confirm the outages and quality of supply indexes with recording instruments. Economics Costs monitoring. Observing the stocks, by means of publicly accessible data (the distribution companies are listed on the stock exchange). There is legal authorization already.

Comments:

The NERC's oversight responsibilities are already quite broad; no expansion of NERC oversight functions with respect to licensees seems necessary, [at least] in the near future in **Ukraine**.

The activity of the **Estonian** Energy Market Inspectorate are exactly regulated by the Energy Act. There will be changes in the new Energy Act and in connection with energy market opening.

In **Lithuania** according to the new Law, the Commission will be obliged to issue licenses for transmission, distribution and supply and supervise license conditions and particularly fulfillment of different legal acts. So, they will have not only right but and an obligation to extend their activities.
That could be:
1) supervise how licensee ensure that no separate business shall give any cross subsidy;
2) supervise how licensee separate accounts for separate businesses;
3) supervise over availability of resources, disposal of assets;
4) compliance with the Market Rules, Grid Code, Distribution Code and others;
5) review of the complaint handling procedures;
6) introduce and fulfil service quality examine procedures;
7) supervise of compliance to the conditions of the standard contracts.

5.a. Legal background for such extensions

The answer was yes in **Georgia, the Kyrgyz Republic and in Albania**.

In **Latvia** there will be a law in force on Regulators of public utilities from the 1st of July. After adoption of this law there can be changes in the area of supervise

In **Hungary** in the case of power plant the answer is yes, but no for the suppliers. The currently debated new Electricity Law will allow to specify threshold values for service standards. It is our plan to prepare this type of supervise.

In **Romania:** The Romanian Energy Law.

5.b. Additional data to be collected in the field of technology, finance, accounting or trading

5.ba. From generators

Georgia
Monthly (quarterly) volume of electricity produced, its cost, actual revenue (separately for power bought by the energy market and by consumers through direct agreements, including accumulated taxes).

Hungary
Nothing in the technical areas of power plants**.**
In the case of Suppliers:
The report requirements of the areas based on outages data. The indicators of the companies do not reflect (hide) the internal spread. The HEO is interested in bringing up weaker areas.

5.bb. from transmission companies

Georgia
Deviation from the projected electricity balance.

Albania
They would like to take some information's (methodology) for application in the practical conditions.

5.bc. from distribution companies

Georgia
Deviation from the projected electricity balance at all monitored voltage lines

5.bd. from electricity traders

At the moment no data collected

5.be. from system operators

Georgia
Major accidents involving complete or partial failure of the power system.

6. Minimal features that needs to be monitored

Kyrgyz
The State Energy Agency under the Government of the Kyrgyz Republic believes that monitoring should be mandatory for all types of operations in the republic at the current transitional stage. This is related to the fact that the privatization process in the power sector is only in its initial stage.

Ukraine
Oversight with respect to various components of (electric-power, transmission, distribution,) tariffs.

Albania
a- separation of activities (generation ,transmission and distribution).
b- Calculation of the cost by the activity.
c- Compile the norms and standards for the transmission and distribution .

Romania: Energy sector activities subject to compliance obligations are: activities that are fully competitive; activities where competition is being introduced but the market is not yet fully competitive; and activities which are not open to competition.
According to the PHARE Program regarding the *"Assistance in the Development of Secondary Legislation for the Regulation of Electricity and Heat Markets Project Discussion Note: Guidance to A.N.R.E. – Compliance Monitoring"*, there are 4 approaches to compliance monitoring: collection of data, spot checks, investigate suspected non-compliance and benchmarking.
Some features must be universal requirements for all licensees: to ensure that the safety standards are maintained and the confidentiality of customers information

6.a. at generators

Georgia
Protection of the schedule adopted by the wholesale market, and technical monitoring of electric power. Ensuring that electric power produced is paid for. Mandatory monitoring of compliance with regulations and standards.

Romania
Market rules encourage generators for competition, compliance monitoring should start with market prices, ANRE must check that emission limits are not breached

Hungary
The present regulation contains minimal features.

6.b. at transmission companies

Georgia
Protection of the schedule adopted by the wholesale market, and technical monitoring of electric power. Ensuring that electric power produced is paid for. Mandatory monitoring of compliance with regulations and standards.

Romania
Licensee efficiency improving, charges being demanded for connection to the system both reasonable and non-discriminatory, system tariff structure cost-reflective and non-discriminatory.

Hungary
Availability of the wires.

6.c. at distribution companies

Georgia

Protection of the schedule adopted by the wholesale market, and technical monitoring of electric power. Ensuring that electric power produced is paid for. Mandatory monitoring of compliance with regulations and standards.

Hungary
SAIDI (System Average Interruption Duration Index), SAIFI (System Average Interruption Frequency Index)

Romania
Licensee efficiency improving, charges being demanded for connection to the system both reasonable and non-discriminatory, system tariff structure cost-reflective and non-discriminatory.

6.d at electricity traders

Ukraine
Oversight of compliance with standards regulating sufficiency of assets.

Romania
The main areas of regulatory concern in supply (trade) will be:
- What level of customer service should be delivered, is being delivered, and is it improving?
- How commercially astute are suppliers at buying generation?
- Is the price examine being correctly applied?

6.e. at system operators

Georgia
Mandatory compliance with regulations and standards by those licensed to generate, import, export, transmit, or dispatch electric power in accordance with the established power system modes of operation.

Romania

An annual check to confirm that the long-term plan is consistent with these guidelines will be required as well as checks to ensure that a commercial position is not being taken, particularly in the handling of transmission constraints.

7. Benchmarking and their use

Ukraine
We believe that it would be useful to develop overall company-level operational efficiency indicators (including economic and engineering parameters, as well as indicators that can be used to determine the quality of the services provided to customers) for each type of licensed activity.

Estonia
It is particularly useful at distribution companies and electricity traders.

In **Lithuania** the benchmarking could be applied for distribution and supply companies. I think when we issue the licenses we will certainly do that and these data will rather important dealing with different suppliers.

These and other kinds of activities by my opinion, would be important fulfilling monitoring of conditions of licensed activities.

Romania
In Romania the benchmarking could be applied for the generation, transport, distribution and supply activities. Generally, the following data can be used in order to compare different companies:

7.a. at generators

Georgia
Uninterrupted operation of regulators of frequency and voltage.

Romania

- Total energy produced and number of clients
- Fuel consumption
- Environment protection
- Not compliance with the license provisions

7.b. at transmission companies

Georgia
Number of power transformers connected at substation, continuous operation of automated voltage switches, level of voltage at monitored points.

Romania

- Energy Quality
- Connections/ Disconnections
- System Unavailability
- Incidents
- Performance Standard observation

Hungary
The frequency and duration of the planned and unusual consumers' outages.

7.c. at distribution companies

Georgia
Monitoring of voltage at monitored points.

Hungary
The frequency and duration of the planned and unusual consumers' outages

Romania

- Energy Quality
- Connections/ Disconnections

- System Unavailability
- Incidents
- Performance Standard observation

7.d. at electricity traders

Romania: for suppliers:

- Supply Service Quality
- Total energy supplied and number of clients
- Billing activity
- Metering activity

7.e. at system operators

Georgia

Compliance with operating standards established for power generators and transmission facilities; flows of electricity and capacity between intra-system, as well as inter-system transmission lines.

8. Participation in the preparation of benchmarking aspects

Yes / Kyrgyz Republic
Yes. In this subject it is conceivable to work together in working group. /Romania
No answer / Ukraine
It would be feasible to work in the working group / Estonia
Working group must discuss the mentioned questions. / Latvia
For us is very difficult to contribute in the preparation on the benchmarking, but we have need for taking experience from the other countries. / Albania
Yes. In this subject it is conceivable to work together in working group. / Hungary
Yes, as member of a working group/Moldova

8.a. Do you see a potential for creating benchmarking data within ERRA?

We think it is possible, and we will participate. / Georgia
Creating a benchmarking system within ERRA would most fully reflect the experience of all ERRA members. / Kyrgyz Republic
Yes. We think that the best results will be only for the transmission company. /Romania
No answer / Ukraine
Yes, I do. / Estonia
Yes, on Regulators of public utilities / Latvia
Yes. / Hungary

Appendix A

Magyarországon a jövőben vizsgálandó paraméterek

Parameters to be examined in the future / Hungary

A. Currently Applied Indicators of Economic Analyses

Assets

--Ratio of invested assets =(invested assets×100)/assets total)
--Ratio of tangible assets =(tangible assets×100)/total assets)
--Ratio of current assets =(current assets×100)/total assets
--Capital adequacy ratio =(equity×100)/(stock + tangible assets)
--Ratio of equity=(equity×100)/total resources

Earning situation

--Return on sales ??????= (usual result of the enterprise ×100)/net sales ???????
--Return on equity =(usual result of the enterprise ×100)/equity
--Current assets = value of current assets – short term liabilities
--Return on assets =(after-tax profit ×100)/total asset value
--Rate of return =(after-tax profit ×100)/equity

Financial situation

--Liquidity indicator I. = (current assets - stocks)/short-term liabilities
--Liquidity indicator II. = current assets/short-term liabilities
--Ratio of buyers and suppliers =(account receivables from goods and services×100)/liabilities from goods and services
--Ratio of cash and current assets =(cash ×100)/current assets
--Ratio of liabilities =(liabilities ×100)/total resources
--Extent of indebtedness =(long-term liabilities×100)/(equity + long-term liabilities)

B. Indicators to be Monitored in the Future:

I. GENERATORS

1) *Sales unit price (power plant sales) = sales from electricity / supplied electricity*

   a. Standard deviation between generators
   b. Tendency based on historic data

2) *Specific profit (concerning of unit):*

   - unit margin???? [specific profit] = (sales from electricity / supplied electricity) – per unit cost, of supplied electricity
   - margin volume ???= supplied electricity x unit margin ???
   - margin volume / equity
   - margin volume / net value of tangible assets

   a. spread between generators [standard deviation]?????
   b. Tendency based on historic data

3) Evaluation of business plans (3years-rolling, current annual). / Technical, development, cost effectiveness, commercial viewpoints, plan-fact difference

analysis, correlation analysis./

II. TRANSMISSION COMPANIES

1) Purchase
   a. Structure, materials
      - quantity,
      - value,
      - unti price
   b. tendency from historic data („a.")

2) Sales
   a. Ratio according to tariff groups
      - quantity,
      - value,
      - unit price
   b. Tendency from historic data („a.")

3) "Network" loss: total sales – supply availability

4) Margin

   - volume = sales revenue – buying cost (HUF)
   - unit margin = margin volume / quantity of sales (HUF/kWh)
   - margin volume / equity
   - margin volume / net value of tangible assets

   a. Tendencies from historic data

SUPPLIERS

1) Purchase
   a. Structure, materials
      - quantity,
      - value,
      - unti price
   b. tendency from historic data („a.")

2) Sales
   a. Ratio according to tariff groups
      - quantity,
      - value,
      - unit price
   b. Tendency from historic data („a.")

3) ”Network” loss: total sales – supply availability
   a. Spread between suppliers [standard deviation] ???????
   b. Average of suppliers
   c. Tendency from historic data for each supplier and as their average

4) Margin
   - volume = sales revenue – purchasing cost (HUF)
   - unit margin ???? = margin volume/ quantity of sales (HUF/kWh)

   a. Ratio of margin between individual suppliers
   b. specific value of margin per supplier:
      - for supplied quantity,
      - for equity,
      - for the net value of tangible assets
   c. Tendency from historic data

Correlation between outages, consumer satisfaction and the number of personnel (structure) (tendencies; correlations).

6) Review of guaranteed services

7) Evaluation of business plans (3 years-rolling, current annual). / Technical, development, cost effectiveness, commercial viewpoints, plan-fact difference analysis, correlation analysis./

Data supply from the system operators and traders yet is not part of the monitoring system in some countries or this part of the system is under elaboration.

APPENDIX B
Questionnaire on verifying compliance with license conditions by TbilGNERC and Tbilelektrocentral co-generation plants

1. Assessment of the program to prepare for the fall-winter season
   1.1 What documents mandate the preparation program?
   1.2 What materials were used to develop the program, how are program priorities set?
   1.3 How does the program assess the cost of specific tasks and the whole program?
   1.4 What principles are used to select the performing organizations?
   1.5 What guidelines regulate the acceptance of prepared equipment and buildings/facilities, how is the service documentation filled out?
   1.6 What tasks does the plant perform to develop electric power and energy? How are these tasks performed?

2. Personnel
   2.1 What personnel comprise the teams servicing and operating primary and auxiliary equipment?
   2.2 Which personnel, continuous training, and certification program are implemented?
   2.3 Who is responsible for personnel work?

3. Technical documentation
   3.1 Presence of operational documentation
   3.2 Presence of plant-wide and operating instructions on equipment and buildings/facilities. Are personnel familiar with these documents?
   3.3 Presence of job descriptions/instruction at each work site and their quality.
   3.4 Presence of blueprints for all devices and structures, underground utilities, primary and secondary power circuits; technological and operational flowcharts.

4. Equipment (evaluated on the basis of personnel interview, visual observation and examination of technical documents).
   4.1 Boilers
      4.1.1 Rated values and operating conditions
      4.1.2 Technical status of major and auxiliary devices, including:
         - heating surface of boiler units;
         - natural gas burners and oil sprayers
         - forced air intake and steam absorbing mechanisms
         - regenerating air-heaters
         - air ducts and pipelines for spent gas
         - fixtures and insulation

      4.1.3 Evaluation of the efficiency of the management and regulation system

4.2.Turbine facilities

      4.2.1 Rated values and operating conditions
      4.2.2. Technical status of major and auxiliary devices, including:
         - turbine steam discharge pipe
         - water feed circuit
         - condensate pumps, booster pumps, turbopumps, electric pumps

- high and low pressure water heaters,
- fixtures and insulation
- oil systems
- turbine regulation

4.2.3. Evaluation of efficiency of the management and regulation system

4.3 Electrical and electronic devices

4.3.1. Technical specifications of the primary equipment

4.3.2 Technical condition of the primary and auxiliary equipment, including:

- generator, power transformer, house transformer
- transformer start-up system (main and backup), voltage regulation
- switches, disconnections and other commutative devices
- surge protection
- factory assembled screened wire ways
- house alternating current system
- system for providing the customer with constant operating voltage
- batteries
- relay protection and automatic equipment
- compressed air cycling systems
- hydrogen supply systems and the electrolysis units

4.3.3. Evaluation of the efficiency of management and regulation system

4.4 Technical condition of the process water supply system, including:

- main hydro technical facility and water intake
- modular pump system
- diagonal and circulating pumps
- spray cooling device
- cleaning system for condensate pipelines
- existing filters on circulating pipelines.

4.5 Management of water and chemicals and reuse of spent oils for electrical equipment

4.5.1 Management of water and chemicals, including;

- preservation of primary power-generating equipment (boilers, turbine) when there are long shutdowns
- accidents caused by violation of rules for management of water and chemicals, their number and nature
- quality of water and steam in different areas of the circuit, deviations from standard limits
- assessing of the condition of screened pipelines using test segments
- amount of chemicals in the sediment
- results of metal testing
- chemical purification, its efficacy after flushing the interior surface of the pipeline test segments
- evaluation of the existence of sediment in segments of the turbine steam pipe and assessing the resulting axis shift

- assessment of amount of sediment on condensate pipelines, by study of test segments
- overall evaluation of management of water and chemicals
- monitoring of loss of steam and condensate
- operation of salt-free modular devices, quality of condensate in the devices after passage. Consumption of reagents.

4.5.1 Operation of the chemical shop. Relative consumption of reagents. Consumption and quantity of water used.
4.5.2 Conditions for using turbine and transformer oils

5. Accounting for electric power, including

- amount of power generated
- power used for in-house operational needs
- power used for in-house auxiliary needs
- electric power transmitted to the grid
- electric power meters and their verification

6. Service and maintenance

6.1 Audit of the 2000 service schedule for power units.

6.2 Type of service of power units. Amount of service work and analysis of actual performance of service

6.3 Analysis of failure to perform the amount of service work stipulated in the plan. Impact of this on efficiency of facility operation.

6.4 Service documentation before and after service

6.5 Planned and actual expenditure on power unit service.

6.6 Analysis of power unit operations conducted after service

6.7 Evaluation of service quality

6.7.1 Mean power of facility before and after service
6.7.2 Reasons for failure of power unit to reach planned power
6.7.3 Relative consumption of fuel by power unit before and after service
6.7.4 Instances of emergency outages of power units after service. Based on reason for service (substandard service and its analysis)

6.8 Year 2000 plan for monitoring the metal of the power unit and analysis of its execution.

6.9 Registering units with Gruztekhnadzor after service.

7. Compliance with Gruztekhnadzor regulations on tanks operating under pressure.

8. Measurement instruments and checks of their performance.

9. Management of fuel and supply of fuel to the facility.

9.1 Testing the technological systems of fuel and natural gas management and the reliability of its components.

9.2 Technical status of flow meter equipment and checking their functioning.

10. Supply of materials and spare parts to the facilities.

11. Compliance with operating rules.

12. Fire safety practice, including
- readiness of the automated fire extinguishing system;
- performance of the necessary fire safety measures on pipeline oils.

APPENDIX C

PROGRAM FOR VERIFYING COMPLIANCE OF GEORGIAN HYDROELECTRIC PLANTS WITH LICENSE CONDITIONS

When the technical status of hydroelectric plants is analyzed, special emphasis is placed on the following energy generation equipment: the buildings and structures, the powerhouses, regulation, management, the automatic apparatus, auxiliary mechanisms supporting technological processes, technical documentation, maintenance of accounts on electric power, personnel qualifications, environmental protection and meeting of standards.

Audits must assess the following:

1. Technical data on the facility:

   - name
   - purpose (seasonal, 24-hour, regulating)
   - installed power
   - number of turbo generator units; specifications

2. Personnel
   - qualifications of personnel servicing the primary and auxiliary equipment
   - personnel work, professional upgrade training and certification
   - qualifications of those doing personnel work

3. Technical documentation
   - availability of operational documentation
   - plant-wide and operating instructions on equipment and facilities, operational testing, measurement protocols, familiarity of service personnel with these documents, job and task descriptions for service personnel.
   - availability of blueprints for all devices and structures, underground utilities, primary and secondary power circuits, diagrams of primary and secondary switching systems, partial verification of their correspondence to actual.

4. Structures

- measures to ensure safe operation of the power generation facilities during the period of spring flooding in 2001
- major structures (dam, water intake system, underground structures, and emergency overflow system)
- diversion systems
- generator and other structures
- tail race structures and off take
- design specifications of structures and reasons for any deviations

5. Main equipment (assessed through questioning of personnel, visual inspections, and study of technical documentation).

   5.1 Hydro turbines

- type, power, number of rotations, and other specifications

- impeller, stators, servomotor drive, oil system, regulation, control of vibration and temperature
- status of the oil pressure device and periodicity of the oil pumps

5.2 Speed controllers

- type, specifications, and condition

5.3 Condition of the water gate, mechanisms (disk, slide, spherical) and their specifications

5.4 Hydro generators

- type, power, number of rotations and other specifications
- condition of steel on operating parts based on visual observation and measurement data
- condition of the generator stator, vibration measurements
- technical status of the stator and rotor winding, excitation and automated field extinguishing devices and excitation units
- condition of the cooling and lubrication systems
- condition of automated voltage regulation, on and off mechanisms, frequency automated startup mechanism, and thermal monitoring devices.

5.5 Power transformers and house transformers

- results of measuring rated and operating values
- cooling system
- level of oil in the transformer, oil input, and results of chemical analysis of oil
- condition of the voltage regulating device
- condition of the air-drying filters and thermo siphons
- condition of the emergency oil collectors and their correspondence to design specifications
- condition of the fire extinguishing system
- evaluation of transformer conditions based on measurement results

5.6 Compressor system

- conditions of the compressors and periodicity of their operation
- condition and results of testing compressed air tanks
- air loss ($kg/cm^2/hr$)
- condition of the compressed air line

5.7 Condition of the open and closed distribution systems including:

- condition of the screened current lines
- current transformers and voltage, results of measurement and analysis of oil
- switches and their drives
- condition of oil and insulation based on visual observations and measurement results, are air dryers fitted with filters
- isolator switches and their actuators, state of insulators
- operation of the blocking system
- dischargers, presence of operating counters, external defects and results of their study in the laboratory
- condition of the grounding device based on results of visual observation and measurement

- condition of the lightning rods and metalwork

5.8 Batteries

- type of batteries, number of components, voltage, capacitance, type of charging and discharging units and their condition
- conditions of the battery plates (sulphating, thickness of deposits), verification of certificate on measurement of electrolyte density
- provision of means of protection

5.9 Cable systems

- conditions of the cable ducts, distribution of cables, covering of cable ducts
- conditions of cables according to visual observation
- condition of paint of the exterior covering
- condition of cable ends
- labeling of cables

5.10 Working and emergency lighting.

6. Regularity for testing powerhouses, secondary lines, verification of a sample of testing certificates.

7. Availability of equipment in the electric laboratory, frequency of checking the instruments and measuring devices.

8. Correct operation of measurement and monitoring devices, their calibration.

9. Generation of electric power

- electric power consumed for in-house operational needs
- electric power consumed for in-house auxiliary needs
- transmission of power to the grid, conditions of the power meters, verification of the meters and their interconnection in a grid

10. Availability of spare parts and conditions under which they are stored

11. Compliance with technical operating procedures, safety practices and other directives

12. Fire safety, including:

- availability of personal fire extinguishing devices and their readiness for use
- readiness of the specialized fire extinguishing system

APPENDIX D
Data received from Hungarian energy industry participants

	Name of the power plant:		1994	1995	1 996	1997	1998	1999	2000
1	Installed capacity (at the end of the given year)	MW							
2	Net available capacity (at the end of ...)	MW							
3	Boiler, reactor (at the end of ...)	number							
4	Turbine, gas turbine (at the end of ...)	number							
5	Generator (at the end of ...)	number							
6	Main transformer (at the end of ...)	number							
7	Capacity of the coal storage	1000 t							
8	Normative coal resource at the end of the year	1000 t							
9	Safety coal reserve at the end of the year	1000 t							
10	Capacity of the oil storage	1000 m^3							
11	Normative oil resource at the end of the year	1000 t							
12	Safety oil reserve at the end of the year	1000t							
13	Annual, total primary energy use	TJ							
14	from this: coal/lignite	TJ							
15	fuel oil-	TJ							
16	Combustion oil	TJ							
17	natural gas	TJ							
18	inert gas	TJ							
19	nuclear fuel	TJ							
20	Electricity production (given year)	GWh/a							
21	Own use	%							
22	Net electric energy	GWh/a							
23	Contracted electric energy	GWh/a							
24	Revenue of electricity sales	MHUF							
25	(Rated) cost of net electricity	HUF/kWh							
26	Heat output / Net heat	TJ/a							
27	Annual, overall, energetic efficiency	%							
28	Combustion residues disposal	1000 t/a							
29	Solid particles emission /Dust emission	t/a							
30	Solid particles emission /Dust emission	mg/m^3							
31	SO_2 emission	t/a							
32	SO_2 emission	mg/m^3							
33	NO_x emission	t/a							
34	NO_x emission	mg/m^3							
35	CO emission	t/a							
36	CO emission	mg/m^3							
37	Yearly average number of employees	capita							
38	Number of outages	number							
39	Duration of outages	hours							
40	Outages in peak time	hours							
41	Electricity outage	GWh							
42	Number of unusual outages	number							
43	Table over outages exists	yes/no							
44	Main overhaul happened	yes/no							
45	Number of main overhaul	number							
46	Duration of main overhaul	hours							

47	Length of preventive maintenance + end week maintenance planned over the year	hours							
48	Actual length of planned preventive maintenance + end-week maintenance over the year	hours							
49	Costs of planned preventive maintenance + end-week maintenance over the year	MHUF							
50	Value of) relevant capital improvements / Capital Expenditure	MHUF							
51	Value of) relevant asset loss	MHUF							
52	(Business) Plan for the year / Annual (Business) Plan	yes/no							
53	Three-year Business Plan	yes/no							
54	Production (Generation) planned for the subsequent year	GWh							
55	Production (Generation) planned for the 2nd year from now	GWh							
56	Production (Generation) planned for the 3rd year from now	GWh							
57	Remaining lifetime of (part of) the power plant	date							
			1994	1995	1 996	1997	1998	1999	2000

Summary of Outages Data of the Electricity Supply Companies in 1999

	Description	Units	Data of those 5 years, which are before the given year						The given year
	Year		1994	1995	1996	1997	1998	Average	1999
	Summary of outages indices								
1.1	Number of outages	No.							
1.1.1	Number of outages due to failures of primary fuses of middle and low voltage transformers	No.							
1.2	Electricity outage	MWh							
1.3	Electricity available	GWh							
1.4	Outage index	$^{0}/_{00}$							
1.5	Average interruption time	Minutes							
1.6	Systems minutes	Minutes							
1.7	Severity index								
1.8	Outage per consumer	kWh/consumer							
1.9	Outage due to external errors	MWh							
	Reliability indices by voltage level								
2	**On the high voltage network**								
2.1	Number of outages	No.							
2.2	Electricity outage	MWh							
2.3	Duration	Hours							
2.4	Specific duration	Hours/one outage							
2.5	Specific outage	MWh/one outage							
3	**On the middle voltage network**								
3.1	Number of outages	No.							

3.1.1	Number of outages due to failures of primary fuses of middle and low voltage transformers	No.							
3.2	Electricity outage	MWh							
3.3	Duration	Hours							
3.4	Specific duration	Hours/one outage							
3.5	Specific outage	MWh/one outage							
4	**On the low voltage network**								
4.1	Number of outages	No.							
4.1.1	Number of single faults	No.							
4.1.1.1	Specific number of single faults	No. per 1000 cons.							
4.1.1.2	Average clearing time of single faults	Hours/one outage							
4.1.2	Number of multiple faults	No.							
4.1.2.1	Specific number of multiple faults	No. per 1000 cons.							
4.1.2.2	Average clearing time of multiple faults	Hours/one outage							

APPENDIX E

Detail regarding the performance report / Romania

INDICATORS OF PERFORMANCE – DATA COLLECTED FROM THE ELECTRICITY SUPPLIERS (SUPPLY LICENSE HOLDERS)

The means for following abbreviations are:
JT - low voltage (U< 1kV)
MT - medium voltage (U = 1kV . 35 kV)
IT - high voltage (U > 35kV)

No	Indicators of performance			Value accomplished monthly/yearly				
Ref.	Point	denomination		1	2	3	4	Yearly
1	4.1.5.	Number of requests of consumers to connect to the network	JT home					
			JT small indr.					
			MT small indr.					
			JT big indr.					
			MT big indr.					
			IT big indr.					
		Number of requests for which the interval of time between the moment of registration of the request to connect the consumer till the latter receiving the offer to connect is less than	15 calendar. Days					
			30 calendar days					
			60 calendar days					
2	42.3	Number of requests of supplying contracts	JT home					
			JT small indr.					
			MT small indr.					
			JT big indr.					
			MT big indr.					
			IT big indr.					
		Number of contracts from the preceding point solved within 15 calendar days						
3	4.3.5	Number of claims regarding alteration of type of tariff	Home					
			Small. Indr.					
			Big. Indr.					
		Number of requests from the preceding point solved in less than:	10 days home					
			15 days home					

No	Indicators of performance			Value accomplished monthly/yearly				
Ref.	Point	denomination		1	2	3	4	Yearly
			10 small indr.					
			10 days big indr.					
		Yearly number of complaints regarding the accuracy of the measuring groups (meters of low tension)	JT home					
			JT small indr.					
			MT small indr.					
			JT big indr.					
			MT big indr.					
			IT big indr.					
		Number of complaints from the preceding point solved in less than	10 days home					
			15 days home					
			10 days small indr.					
			10 days big indr.					
4	4.4.3	Number of complaints regarding invoicing	Home					
			Small indr.					
			Big. Indr.					
		Number of complaints from the preceding point solved within 10 working days	Home					
			Small indr.					
			Big indr.					
		Number of complaints regarding invoicing proved to be justified	Hame					
			Small indr.					
			Big indr.					
		Number of consumers disconnected/reconnected for non-payment of the invoices	Home					
			Small indr.					
			Big indr.					
5	4.5.1.7	Number of interruptions caused by incidents	JT					
			MT					
			IT					
		Percentage of consumers reconnected in an	Home					

No	Indicators of performance			Value accomplished monthly/yearly				
Ref.	Point	denomination		1	2	3	4	Yearly
		interval less than 24 hours	Small indr.					
			Big. indr					
		Value of the indemnification paid due to the interruption of supply	Home					
			Small indr.					
			Big indr.					
6	4.5.2.3.	Number of interruptions programmed	JT					
			MT					
			IT					
		Total duration of the interruptions programmed	JT					
			MT					
			IT					
		Number of consumers affected by programmed interruptions	JT Home					
			JT small indr.					
			MT small indr.					
			JT big indr.					
			MT big indr.					
			IT big indr					
7	4.6.4	Number of consumers disconnected yearly for non-payment of the consumed electric energy	Home					
			Small indr					
			Big indr.					
		Number of consumers disconnected and reconnected in less than 24 hours after payment of the obligations	Home					
			Small indr.					
			Big indr.					
8	4.7.6.	Number of complaints regarding the level of tension	Home					
			Small indr.					
			Big. Indr.					
		Number of complaints answered within 15 calendar days	Home					
			Small indr.					
			Big. Indr.					
		Number of complaints unsolved	Home					
			Small indr.					
			Big indr.					
9	4.8.5	Number of written complaints, other than the ones referring explicitly in the present	Home					
			Small indr					

No	Indicators of performance			Value accomplished monthly/yearly				
Ref.	Point	denomination		1	2	3	4	Yearly
		standard of performance	Big indr.					
		Number of complaints from the preceding point answered in less than 30 calendar days	Home					
			Small indr.					
			Big indr.					
10	5.2.3.	Number of consumers who benefited of tariff deductions according to p. 5.2.1.						
		Medium duration for which there have been applied tariff deductions						

1. **Details regarding the financial report**

DATA COLLECTED FROM THE GENERATORS
GENERATION BUSINESS PROFIT AND LOSS ACCOUNT

		Actual			Historic	Forecast		
	Description	[year - 3]	[year - 2]	[year - 1]	[year]	[year + 1]	[year + 2]	[year + 3]
		bnLei	bnLei	bnLei	bnLei	bnLei	bnLei	bnLei
1	**Turnover**	**0,0**						
2	**Cost of Sales:**							
3	Fuel Purchases							
4	Fuel Transport Costs							
5	Energy Purchases							
6	Distribution Use of System charges							
7	Transmission Use of System charges							
8	Interconnector transit charges							
9	Other							
10	**Total Cost of Sales**	**0,0**						
11	**Gross Profit**	**0,0**						
12	**A. Materials costs:**							
13	Plant operation							
14	Plant repairs and maintenance							
15	Non capitalized planning & construction							
16	Connection costs							
17	Meter operation							
18	Way leaves							
19	Advertising and marketing							

		Actual			Historic	Forecast		
	Description	**[year - 3]**	**[year - 2]**	**[year - 1]**	**[year]**	**[year + 1]**	**[year + 2]**	**[year + 3]**
		bnLei	**bnLei**	**bnLei**	**bnLei**	**bnLei**	**bnLei**	**bnLei**
20	Customer records, service & billing							
21	Revenue collection							
22	Bad debts							
23	Corporate overheads and administration							
24	Local taxes on own distribution system							
25	Other materials costs							
26	**B. Staff Costs**							
27	**C. Finance Costs**							
28	Insurance							
29	Depreciation							
30	Other							
31	**D. Exceptional costs**	0,0						
32	**Total materials & staff costs (A + B)**							
33	**Total operating costs (A + B + C + D)**	**0,0**						
34	**Operating profit/(loss)**	**0,0**						
35	Regulated revenue							
36	Excluded services revenue							
37	Other revenue							
38	**Total Turnover**	**0,0**						
39	Exceptional costs - specify							
40	Exceptional costs - specify							
41	Exceptional costs - specify							
42	Exceptional costs (specify)							
43	Exceptional costs (specify)							
44	Exceptional costs (specify)							
45	**Total exceptional costs**	**0**						

Appendix F
United States Practice on Specific Data Collection included in Regulator Monitoring Activities

United States Regulators collect through periodic Reports and other monitoring activities data as to the following several subjects: i) financial results, cost of regulated service and operating data; ii) regulated service quality and customer relationship data; iii) competitive market transactions and data designed to indicate ant-competitive behavior; iv) current reliability of service and planned activities for improvement; and v) data on results achieved in special programs such as environmental improvement or universal (i.e. low-income) service programs. The description provided below is a composite for the Federal Energy Regulatory Commission (FERC) and several State Commissions and no State requires collection of all of the data described. Moreover, the description addresses data collection both in States which have and which have not adopted retail competition. Data on the cost of service of generation provided competitively is typically not or less expansively collected and may raise issues of commercial confidentiality.

1. <u>Data on Financial Results, Cost of Regulated Service, Operations and Results Achieved in Special Programs</u>

FERC requires jurisdictional utilities meeting certain size criteria (i.e. sales of greater than1 million MWhplus certain other requirements) to file an Annual Report known as FERC Form 1 with the Commission. Smaller utilities are permitted to file an abbreviated version of this Form. The Report is also required by many State Commissions to be filed with them and each State may require the filing of a supplemental Annual Report to obtain data important to its specific conditions. Certain States require the filing of portions of this data on a quarterly basis.

Information collected in FERC Form 1 includes general corporate information (i.e. such as the identity of Officers and Directors, major shareholders and descriptions of any share voting agreements), a complete set of financial statements (balance sheet, income statement, cash flows and retained earnings statement and notes thereto), specified supporting schedules to financial statement information that provide more detailed information on matters of importance to regulation and electric plant operating statistics. The detailed supporting schedules requested generally address subjects of importance to the Commission's rate regulation function, such as detailed information on electric plant costs to be included in rate base, capital stock and long-term debt included in capitalization ratios, electric operating revenues and sales by tariff schedule, electric operation and maintenance expense by individual account, purchased power and transmission service, revenue from and amount of transmission of electricity for others and regulatory commission expenses. Operating statistics collected include annual and monthly sales and peak demands, generation production data by plant or plant type, transmission line use, purchased power and transmission of electricity by or for others, number of distribution meters, investment in environmental protection facilities and major plant changes during the year.

Additional State Regulator reporting requirements will typically include the reporting of financial and operating statistics on a state jurisdictional basis (i.e. separate from results achieved in other states) and reporting on the results achieved in State Regulator initiated and administered programs such as nuclear plant decommissioning funds, customer (including low-income) energy efficiency improvement programs, low-income/universal service bill payment programs, renewable energy development programs and other similar initiatives. Under these programs, the State Regulator typically authorizes the assessment on customers of a charge to produce a revenue fund to be expended for the indicated beneficial purpose and the reported data permits monitoring of the amount of funds collected, that they are being used for the beneficial purposes for which the program was established and whether the desired benefits are being achieved.

Both FERC and State Commissions require that they be notified of proposed security issuances, including proposed and actual terms of issuance and uses of funds (i.e. the proposed capital investment program). Notice is also required of proposed and the terms of corporate mergers, major asset sales, major transactions between corporate affiliates, major changes of accounting practice and other similar matters, and a demonstration that such activities are in the public interest may be required. Approval by the Commission of such transactions may also be required, though not at the parent holding company level. State and Federal jurisdiction does not extend to transactions of an international parent which do not directly alter its jurisdictional subsidiary. Finally, because of its importance to electric supply costs, separate reports on the cost and quality of fossil fuels delivered to generation plants and the procurement practices to obtain such fuels may be required.

A copy of the software employed in the preparation and electronic filing of

FERC Form 1 may be obtained from the FERC website (http://www.ferc.gov: click on "Documents & Filing" and then on "Forms") and of a hard copy of FERC Form 1 and a sample State supplemental reporting form from the website of the New York Public Service Commission (http://www.dps.state.ny.us: click on "Commission Documents" and then "Utility Applications and Forms").

2. Data on Regulated Service Quality and Customer Relationships

As described in the Committee's 2000 Program Technical Paper entitled "Paper No. 1: Measuring Electric and Natural Gas Supply/Service Quality and Providing Incentives for Improvement", United States Energy Regulators have required the establishment of thorough and uniform data collection and reporting systems to assist in establishing and implementing service quality standards and a financial incentive program to encourage achievement and improvement of those standards. Required reports must include data upon the occurrence of significant service interruptions, annual reports compiling service interruption and related customer service activities (i.e. for example customer inquiry response times and service reestablishment times) and perhaps quarterly reports containing such information as well. Reported service interruption data will include the frequency and duration of service interruptions over a specified period (typically one year). Customer service data reported may include telephone response times, response times for the completion of written investigations or for the performance of remedial actions in response to customer complaints and time periods required to restore interrupted customer supply. Many service quality programs provide for independent audit of the reported data to serve as the basis of financial reward or penalty payments. This paper also describes the data filing and other requirements of several service quality programs adopted by Regulators in the Region.

State Regulators may also require monthly or quarterly reporting of the magnitude of residential payment arrears, residential service terminations for nonpayment, uncollectible expense and the magnitude of collection expenses, as well as of data demonstrating compliance with Regulator prescribed termination procedures such as advance notice requirements and efforts to develop an installment payment plan if justified.

3. Data on Competitive Markets or to indicate Anti-competitive Behavior

As a condition upon the permission to charge market-based rather than cost-of-service based rates, wholesale electricity suppliers are required to file quarterly reports with FERC reporting upon the total of their wholesale supply transactions during that quarter. Only aggregate data reporting is required (not by individual customer) in order not to reveal commercially sensitive data. Moreover, descriptions of the terms of specific contracts are not required also to avoid release of commercially sensitive data.

Committee 2001 Issue Paper # 3 explains the application process and standards applied in determining whether the authority to charge market-based rates will be granted. This requirement applies to ISOs as well as individual market participants. ISOs will also provide substantial reports on market results and transactions, including particularly the results of their market monitoring activities. An Annual Report by the ISO and its independent Market Advisor upon the competitiveness of its several markets and upon events suggesting the exercise of market power are also filed with FERC and State Commissions. These Reports and their contents, as well as the monitoring and enforcement activities of the ISO and FERC to prevent market power exercise, are more fully explained in Committee Issue Paper # 3 (*Measuring and Assuring the Competitiveness of Energy Markets).* FERC has recently established its own center in the Commission's Offices at which it receives electronically real time market transaction data from ISOs to permit its Staff to perform current market monitoring analyses.

4. Data on Current Reliability of Service and Planned Improvements

Both FERC and certain States require the filing of Reports respecting "control area" operation, current indications of reliability of service and planning actions to maintain reliable supply and transmission service. This could include planned generation and transmission plant additions, existing available transmission capacity, the extent proposed market transactions were interrupted over the past specified period of time due to congested transmission paths, the extent of generation redispatch activities, forecast load and planned generation or transmission additions to preserve reliable service and related matters. Information on these subjects is also provided to the North American Electricity Reliability Council and the United States Department of Energy, each of whom review the data and release studies commenting upon the adequacy and planned/needed improvements to generation or transmission infrastructure. Reports on control area balancing operations include

data on the operator instructions for the balancing operation (i.e. between electrical supply and demand) and sources of balancing energy, and upon actual and scheduled inter-control area transactions are also filed. State Regulators in deregulated markets typically require load serving entities to file five year plans of projected load and supply sources to demonstrate their ability to reliably satisfy their contracted loads. State regulators also require contemporaneous telephone reports of any service emergencies which threaten wide-spread service outages and any deliberate curtailments ordered to avoid such emergencies, followed up by written reports detailing the reasons and response to the emergency. **[This Appendix has been drafted by the Working Group Advisor]**

Appendix G
Parameters which monitored in Ukraine

Daily hourly bid by Centerenergo Generating Company (31.01.2001)

Data			No-load operation price	Cold start price			Gradually incrementing prices				Unit capacity corresponding to incrementing prices				Minimum Off
				Cold	Warm	Hot									Time
Market Code			BNL	BSU	BSU	BSU	INC1	INC2	INC3	INC4	EP1	EP2	EP3	EP4	MOF
Measuring unit			000 Hr/h	000 Hr	000 Hr	000 Hr	Hr/Mwth	Hr/Mwth	Hr/Mwth	Hr/Mwth	MWt	MWt	MWt	MWt	Hour
Period			All	All	All	All	All	All	All	All	All	All	All	All	All
Code	Unit No.	Market participant ID													
G061	U-1	Ts	3320	27900	0	0	88,15	94,62	95,66	96,08	190	200	250	300	0
G062	U-2	Ts	0	0	0	0	0	0	0	0	0	0	0	0	0
G063	U-3	Ts	3320	27900	0	0	88,15	94,62	95,66	96,08	190	200	250	300	0
G064	U-4	Ts	0	0	0	0	0	0	0	0	0	0	0	0	0
G065	U-5	Ts	0	0	0	0	0	0	0	0	0	0	0	0	0
G066	U-6	Ts	0	0	0	0	0	0	0	0	0	0	0	0	0
G067	U-7	Ts	0	0	0	0	0	0	0	0	0	0	0	0	0
G068	Zm-1	Ts	2800	14817,79	0	0	109,47	109,69	111,34	111,34	140	150	170	170	0
G069	Zm-2	Ts	2800	14817,79	0	0	97,23	97,41	98,27	98,27	140	150	165	165	0
G070	Zm-3	Ts	0	0	0	0	0	0	0	0	0	0	0	0	0
G071	Zm-4	Ts	2800	0	0	21506,54	108,67	108,89	109,87	109,87	140	150	165	165	0
G072	Zm-5	Ts	2800	14817,79	0	0	108,18	108,5	109,71	109,71	140	150	165	165	0
G073	Zm-6	Ts	2800	14817,79	0	0	95,51	95,78	96,29	96,29	140	150	160	160	0
G074	Zm-7	Ts	2800	0	15623,37	40938,1	105,73	107,17	110,3	115,81	90	100	230	275	0
G075	Zm-8	Ts	0	0	0	0	0	0	0	0	0	0	0	0	0
G076	Zm-9	Ts	2800	21286,84	11790,76	0	95	96,27	99,04	103,69	90	100	230	275	0

G077	Zm-10	Ts	2800	21286,84	11790,76	0	94,39	95,65	98,39	103	90	100	230	275	0
G078	Tp-1	Ts	1565,05	26018,12	9637,45	0	104,69	108,56	114,99	116,51	120	130	225	264	0
G079	Tp-2	Ts	1565,05	26018,12	9637,45	0	104,69	108,56	114,99	116,51	120	130	225	264	0
G080	Tp-3	Ts	1565,05	26018,12	9637,45	0	104,69	108,56	114,99	116,51	120	130	225	264	0
G081	Tp-4	Ts	1565,05	26018,12	9637,45	0	104,69	108,56	114,99	116,51	120	130	225	264	0
G082	Tp-5	Ts	1471,41	0	0	46128,46	112,43	115,99	118,3	120,04	140	150	280	297	0
G083	Tp-6	Ts	1471,41	0	0	46128,46	108,67	110,88	116,75	121,07	140	150	280	297	0

Actual hourly power consumption by the producers (31.01.2001, MWth)

Time of the day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Consumption by suppliers	16253	15843	15660	15716	16001	16710	18160	19097	19112	18835	18948	18887	18560	18569	18428	18439	18808	19718

Hourly supply of electricity to the Wholesale market of suppliers operating at fixed prices (31.01.2001, MWth)

Time of the day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Produced by NPP	8535	8544	8531	8525	8534	8552	8619	9004	9095	9081	9045	9115	9191	9261	9264	9255	9255	9287
Produced by HPP	540	3	-89	-83	8	353	1299	1793	1746	1707	1676	1438	1110	1163	1117	1101	1459	2491
Power flows	-16	-11	-5	1	9	11	20	2	3	-6	16	11	-7	-11	-11	-14	-11	-50
Produced by cogeneration	146	151	143	148	152	148	155	152	138	137	137	142	138	137	138	139	141	142

Hourly and daily average weighted wholesale price for electricity (31.01.2001, MWth)

Time of the day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Wholesale price for electricity	70,4	66,2	65,9	65,8	67,5	70,9	127,3	135,5	146,0	146,6	138,0	137,2	137,5	137,5	137,7	137,5	146,0	146,0

Hourly power purchases at the Wholesale market by the suppliers, who use regulated tariffs, and by independent suppliers (31.01.2001, MWth)

Time of the day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Regulated tariff suppliers	15209	14781	14579	14669	14936	15607	17071	18003	17986	17728	17875	17805	17475	17488	17339	17298	17636	18559
Unregulated tariff suppliers	957	973	985	960	975	991	965	976	1024	1023	1002	1024	1024	1015	1007	1048	1062	1061

Hourly payments by suppliers: regulated tariffs and independent (31.01.2001, 000 Hryvna)

Time of the day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Regulated tariff suppliers	1071	978	960	965	1008	1106	1770	2037	2224	2196	2064	2039	1999	2003	1985	1976	2172	2306
Unregulated tariff suppliers	67	64	65	63	66	70	123	132	150	150	138	140	141	140	139	144	155	155

Attachment No. 1 to Order No. 163 (06/03/99)

Unified Power System (UPS) of Ukraine: Daily Schedule of Operation

01.31.01 (Wednesday)

Table 1

UPS		Power		Mornng max (10.00)		Evening max (18.00)		At 3 am	
		mln kWt/h	Price **	Cpcty MWt	Price	Cpcty MWt	Price	Cpcty MWt	Price
Consump. in Ukraine	Limit	**527,5**	kop / kWt/h	**24468,0**	kop / kWt/h	**24468**	kop / kWt/h	**24468**	kop / kWt/h
	Schedule	**547,7**		**23800,0**		**25200**		**19700**	
	Actual	**544,4**		**23473,0**		**24987**		**19735**	
Cogen	Schedule	**277,6**	**12,39**	**11975,0**	**13,58**	**12125**	**13,58**	**9890**	**9,16**
	Actual	**288,1**		**12507,0**		**12368**		**10811**	
NPP	Schedule	**242,9**		**10120,0**		**10120**		**10130**	
	Actual	**231,8**	**8,46**	**9748,0**		**9965**		**9164**	
HPP ***	Schedule	**25,40**		**1472,0**		**2721**		**42**	
	Actual	**34,00**	**2,7 / 2,59**	**1650,0**		**3208**		**73**	

General data Table 6

	Current yr	Previous year
Frequency Fmin	**49,26**	**49,27**
Fmax	**49,89**	**49,74**
Fcp	**49,40**	**49,39**
Consumption	**544,4**	**551,1**
Capacity	**24987,0**	**24737,0**
Temperature	**3,5**	**-0,9**
Filling coef	**0,908**	**0,928**
Uniformity coef	**0,790**	**0,842**
ESC+SLL (c)	**1020**	**6350**
ESC+SLL (r)	**690**	**3742**
SSLL+ELSS	**0**	**0**

Diff	Schedule	**-9,2**		**-410,0**		**-410,0**		**-325,0**	
	Actual	**-9,6**		**-431,0**		**-553,0**		**-312,0**	
Ukr-Russia	Schedule	**0**		**0,0**		**0**		**0**	
	Actual	**0,1**		**3,0**		**2**		**-1**	
Moldova*	Schedule	**0**		**0,0**		**0**		**0**	
	Actual	**-0,6**	**13,79**	**-18,0**		**-128**		**0**	
Export	Schedule	**-9,2**		**-410,0**		**-410**		**-325**	
	Actual	**-9,1**	**12,42**	**-416,0**		**-427**		**-311**	
Deficit (E and P)***	Schedule								
	Actual								

Note: **Average weighted price for electricity, cogen

***** - price for HPP-produced electricity = electr prices DniprHPP/ electr prices DnestrHPP, electr price KiGAES= price of inflow/price of release= 8,57 / 16,65 ,**

Daily electricity consumption and capacity use in the regions of Ukraine

Oblast	**Power consumption**	**Max load consumption**

Table 2

AFL	**0**	**0**
Disp. eff. P*	**100**	**750**
E-effect	**0**	**2**
Act. reduct. In P	**100**	

ESC (emergency shutdown schedule); SSLL (special schedule for local loads);

ELSS (emergency load shutdown system); AFL (automatic frequency unload).

evening max consumption.

(c)-command,(r)-report

Fuel Table 5

Delivered	Consumption	Remainder
Coal	000 tnf/day	000 tnf
83,8	**104,6**	**1300,2**
Crude oil	000 tnf/day	000 tnf
2,0	**1,0**	**231,2**
Gas	This year	Last year

Region	mln kWt/h	Deviation from	MWt	Deviation from
	Actual	plan, %	actual	plan, %
Ukraine	**544,4**	**3,2**	**25069,0**	**2,5**
Oblenergo	**478,5**	**4,4**	**21955,0**	**2,6**
Vinnitsk	**10,4**	**-13,6**	**523,0**	**-7,3**
Ternopol	**4,6**		**257,0**	**15,3**
Khmelnits	**7,7**	**8,0**	**408,0**	**17,2**
Chenovits	**4,8**	**9,0**	**231,0**	**4,1**
Dneprop	**84,2**	**5,7**	**3475,0**	**-3,2**
Zaporozh	**39,6**	**13,6**	**1611,0**	**1,6**
Kirovograd	**8,4**	**0,5**	**367,0**	**-2,4**
Donetsk	**81,0**	**6,6**	**3530,0**	**3,3**
Luganssk	**36,5**	**3,9**	**1538,0**	**1,3**
Kyiv	**22,8**	**-0,4**	**1198,0**	**4,6**

mln m3/day	**33,2**	**67,6**

tnf = ton natual fuel

Table 4

Cogen plants	Situation at BM		Night MIN ***	UM* | CS*	Coal reserves	Crude oil	Gas	
	Oper. units	Actual/Plan	Actual/Plan	MS | FL	000 tons	reserves	supply	
LuTES	**4**	**612 / 600**	**522 / 390**	**2 # 0**	**149,8**	**2,7**	**1,0**	**7**
CbTES	**4**	**682 / 680**	**586 / 420**	**1 # 3**	**62,8**	**3,4**	**0,7**	
SlTES	**0,5**	**319 / 320**	**271 / 280**	**0,5 # 0 # 0**	**159,6**	**1,8**	**1,0**	
UM MS - unscheduled maintenance (number of units), start for max capacity	**2+0**	**405 / 400**	**398 / 400**	**0 # 4**	**5,0**	**6,6**	**0,5**	
KuTES	**5**	**922 / 720**	**766 / 450**	**2 # 0**	**67,6**	**6,4**		
ZuTES	**4**	**1035 / 1040**	**851 / 840**	**0 # 0**	**170,6**	**3,0**	**0,5**	
PlTES	**3+2**	**936 / 930**	**718 / 620**	**1 # 0**	**110,2**	**3,5**	**1,2**	
KrTES	**1,5**	**415 / 400**	**377 / 370**	**2 # 2,5**	**28,1**	**7,5**	**1,1**	
ZaTES	**3+1**	**1205 / 1230**	**1111 / 1100**	**0 # 1**	**118,1**	**9,2**	**3,4**	
ZmTES	**4+2**	**1104 / 970**	**989 / 850**	**0 # 2**	**102,6**	**5,5**	**1,9**	

Kyiv Obl	**14,3**	**1,9**	**694,0**	**3,4**
Chernigov	**6,3**	**3,5**	**325,0**	**5,2**
Cherkassk	**11,3**	**2,8**	**488,0**	**0,8**
Zhitomir	**7,6**	**4,5**	**390,0**	**-1,0**
Crimenergo	**16,1**	**6,6**	**826,0**	**4,6**
Sevastopol	**3,0**	**15,1**	**160,0**	**14,3**
Volynsk	**4,8**	**23,0**	**251,0**	**19,5**
Zakarpat	**6,9**	**11,7**	**330,0**	**14,6**
Ivan-Frank	**7,3**	**-14,4**	**352,0**	**-4,9**
Lvov Obl	**14,5**	**14,1**	**721,0**	**19,8**
Rovno Obl	**7,3**	**15,1**	**371,0**	**15,9**
Nikolaev	**10,9**	**-4,2**	**turb m3/sec**	**-10,8**
Odessa	**20,6**	**5,1**	**1027,0**	**9,8**
Kherson Obl	**9,7**	**-8,4**	**524,0**	**-1,1**
Poltava	**13,7**	**-20,0**	**706,0**	**-6,5**
Sumy	**8,8**	**-2,6**	**389,0**	**-12,4**
Kharkov	**25,9**	**8,1**	**1297,0**	**9,0**

Hydro resources

KhTets-5	**1+1**	**280 / 280**	**280 / 280**	**0 # 1**	**0,0**	**11,2**	**2,0**	
TpTES	**3+0**	**795 / 840**	**560 / 540**	**1 # 0,5 0 # 2**	**70,6**	**9,3**	**1,2**	
KTets-5	**2+2**	**601 / 650**	**538 / 550**	**0 # 0**	**0,0**	**52,8**	**4,7**	
KTets-6	**2**	**501 / 500**	**465 / 450**	**0 # 0**	**0,0**	**57,2**	**4,0**	
LadTES	**2**	**424 / 460**	**390 / 380**	**0 # 3**	**37,6**	**2,9**	**0,7**	
DoTES	**2+2**	**355 / 350**	**334 / 320**	**1 # 0**	**28,7**	**2,1**	**0,2**	
BuTES	**2+3**	**584 / 585**	**485 / 480**	**0 # 1 | 2 # 2**	**24,7**	**5,6**	**0,8**	
Total	**53**	**11175 / 10955**	**9641 / 8720**	**1,5 # 1**	**1136,2**	**190,8**	**24,9**	**actual**
								0
RAES	**2+0**	**828 / 820**	**835 / 830**					**0**
ZAES	**6**	**5328 / 5300**	**5298 / 5300**					
KhAES	**1**	**1010 / 1000**	**1005 / 1000**					
UyUAES	**3**	**2799 / 3000**	**2026 / 3000**					
ChAES	**0**	**0 / 0**	**0 / 0**					
Total	**12**	**9965 / 10120**	**9164 / 10130**	**0**	**0**			

Situation at BM - plant load at 18 pm. Night MIN *** - plant load at 3 am

UM MS - unscheduled maintenance (number of units), start for max capacity

CS FL - cold start (no of units), fuel limination

Table 3

HPP	Balance M	Unsched. CM	Filling sched. cm/day	Max level M	Plnd consump m3/sec	Avg consump planned	Actual consum turb m3/sec	Overconsump mln kWt/h	Release thru gatehs m3/sec
Kiyv	**102.29**	**1**		**102.5**	**700**	**700**	**727**	**27**	**0**
Kanev	**91.41**	**5**		**91.3-91.5**	**900**	**900**	**819**	**-81**	**0**
Kremench	**78.45**	**-3**		**78.4**	**1200**	**1200**	**1697**	**497**	**0**
DD HPP	**63.77***	**-1**		**63.8-64.0**	**1200**	**1200**	**1847**	**647**	**0**
D HPP	**51.23***	**9**		**50.7-51.4**	**1200**	**1200**	**1676**	**476**	**0**
KachHPP	**15.29**	**-2**		**15.3-15.4**	**1800**	**1800**	**2107**	**307**	**0**
Dnestr **	**114.62***	**1**			**120**	**120**	**124**	**4**	**0**

Actual inflow of the river Dnestri

1220 m3/sec

river Dnestr

120 m3/sec

Note:

* - water reserves level at 12 pm.

** - DnsHPP - expenses in NB no less than 120-130 m3/sec

1) Separate operations with EES Rossii, cross-border data

2) Overuse of hydro resources (Tbl.1) for 8,6 mln kWt/h, **(beg of the month - 186,1 mln kWt/h)**

3) Oblenergo shortage relative to max consumption parameters (Tbl.2) for 21,1 mln kWt/h and 565 MWt at BM, **(beginning of the month - 999,7 mln kWt/n), which leads to add'l fuel consumption.**

4) Non-compliance with the dispatch plan for over 20% at the following plants:

Plant	Beginning	End	Reason
SlCogen	8-46	22-01	АР К-7Б

5) Deficit of production at Nuclear PP (Tbl.1) at: 11,1 mln kWt/h

Lowering units 1,4,5,6 ZNPP down to 800 MWt because of the limitations of the ZNPP capacity release schedule to 5300 MWt.

From 22:58 01.30.01 to 06:38 01.31.01 - maintenance of unit 1 UU-

NPP.
6) Low efficacy of mandatary consumption reduction measures (Tbl. 6).

Central dispatcher of Ukrenergo **V.I. Redin**

Director of SOEnR **K.B. Denisevich**

HPP - hydro power plant
NPP - nuclear power plant
Cogen - cogeneration power plant